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December 23, 1982
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1982 DEC 27 PM 3 53

U.S. NUCLEAR
 REGULATORY COMMISSION

TMI Program Office
 Attn: Mr. L. H. Barrett, Deputy Program Director
 US Nuclear Regulatory Commission
 c/o Three Mile Island Nuclear Station
 Middletown, PA 17057-0191

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
 Operating License No. DPR-73
 Docket No. 50-320
 Radioactive Water Management Program

This is the periodic report presenting results of the program to detect radioactive water leakage to the groundwater of TMI-2.

Groundwater Monitoring

The following groundwater monitoring data is attached:

1. Individual computer graphs (Figure 1) of tritium concentrations for each monitoring station, observation station, and the East Dike Catch Basin (EDCB) up to and including November 2, 1982, except for MS-4. The samples from MS-4 for September 14 and October 4 are being reanalyzed with more sensitive instruments. These results should be included in the next report.
2. Individual computer graphs (Figure 2) including water levels within the monitoring stations up to and including November 2, 1982.
3. A graph (Figure 3) indicating gamma scan data from Monitoring Station MS-2 sample analysis.
4. Computer Tables (Table 1 and 2) of gamma scan data up to and including November 22, 1982.
5. Composite Sr-89 and Sr-90 groundwater results for first and second quarter (Table 3 and 4).
6. A composite drawing showing all monitoring locations with a graph of the tritium concentrations reported in each station.

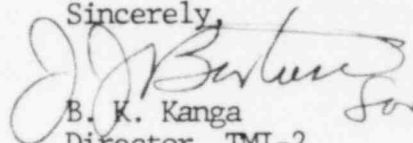
*IE25
 Add: Reg Files
 L.H. Barrett*

Tritium concentrations during this report period in the monitoring stations, observation stations, and the East Dike Catch Basin remained within the range of previously reported values.

Gamma results were LLD for MS-3, MS-5, MS-6, MS-7, MS-8, OS-10, OS-14, and EDCB. The naturally occurring isotopes of Ra-226 and K-40 were detected in MS-1, MS-2, OS-13B, and OS-17 samples. Cs-137 was detected in MS-2 samples on October 4, 11, and 25. Concentrations of Cs-137 found in MS-2 ranged from 7.7 ± 5.0 pCi/l to 54 ± 19 pCi/l. The presence of Cs-137 is attributed to the sediment contents of the samples. No Cs-137 was detected from MS-2 during the first four weeks of November (as reported by Unit 2 Chemistry). Gamma results from MS-4 for the October 4 sampling date have not been received.

The Sr-90 reanalysis of the 1982 First Quarter OS-16 sample was reported as LLD. The 1982 Second Quarter MS-8 sample reanalysis result has not been received, however, it should be available for the next report. Updated tables of the First and Second Quarter Strontium results are included in this report.

Sincerely,



B. K. Kanga
Director, TMI-2

BKK/SWS/jep

Attachments

CC: Dr. B. J. Snyder, Program Director - TMI Program Office

LIST OF ATTACHMENTS

Figures

- Figure 1 Graphs of Tritium Concentrations of Monitoring Stations and East Dike Catch Basin Samples Versus Time
- Figure 2 Graphs of Water Levels in Monitoring Stations Versus Time
- Figure 3 Gamma Scan Results for Monitoring Station MS-2 Versus Time

Tables

- Table 1 Cesium 137 Concentrations in Monitoring Stations MS-1 to MS-8
- Table 2 Cesium 134 Concentrations in Monitoring Stations MS-1 to MS-8
- Table 3 First Quarter Composite Sr-89 and Sr-90 Groundwater Results
- Table 4 Second Quarter Composite Sr-89 and Sr-90 Groundwater Results

Drawing

Groundwater Tritium Concentrations at Site Liquid Monitoring Stations

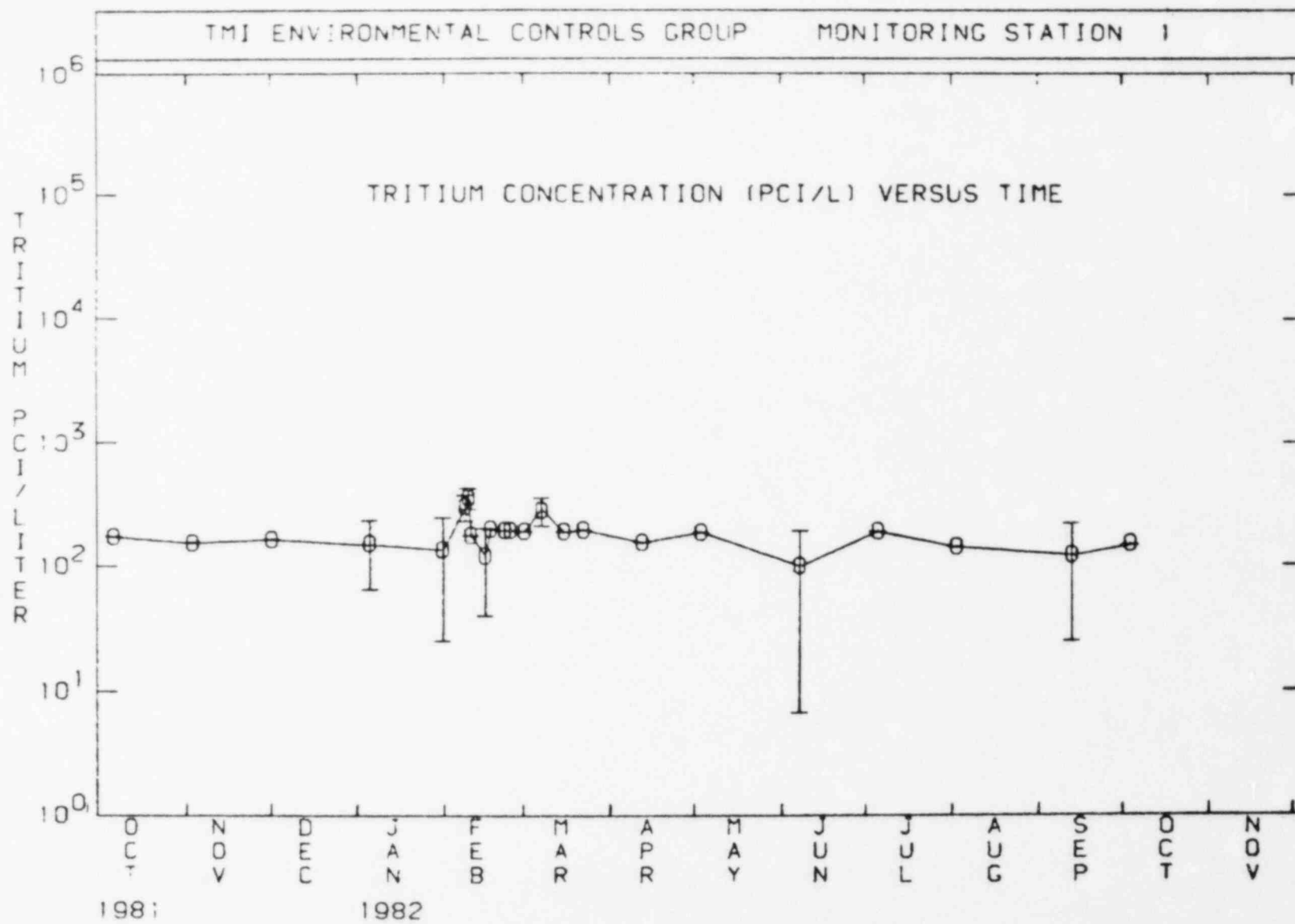
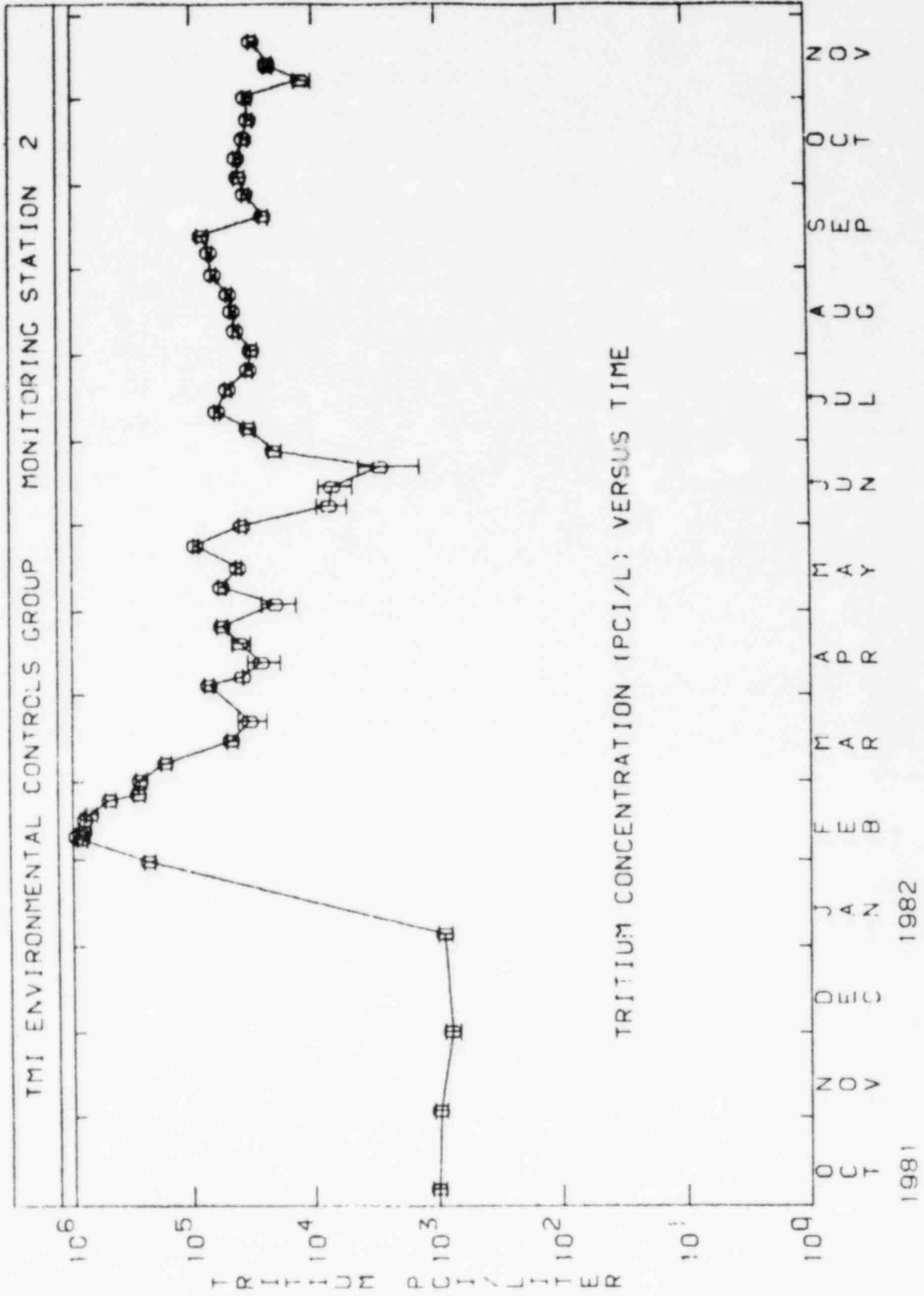
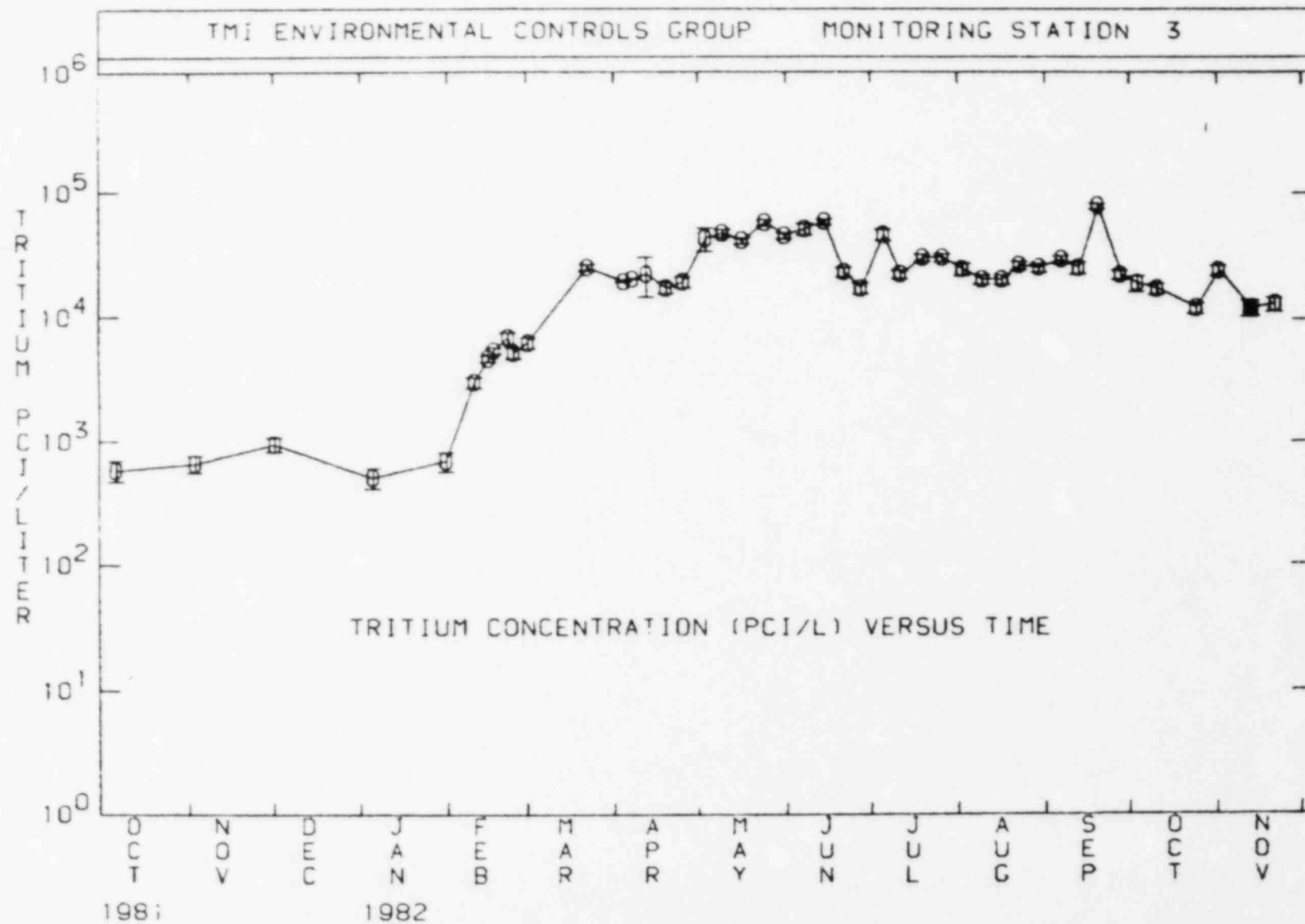


Figure 1
Page 2 of 15





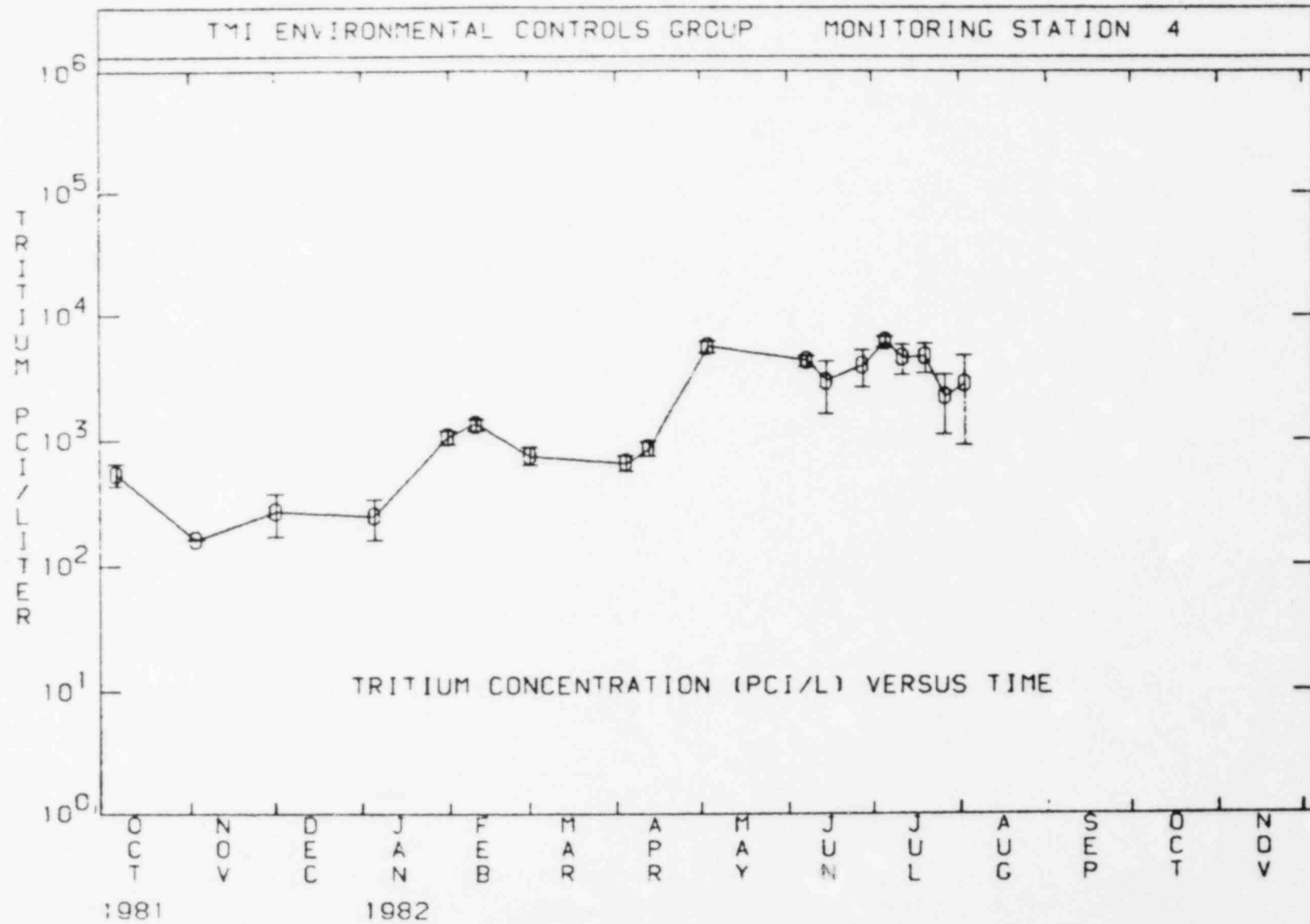
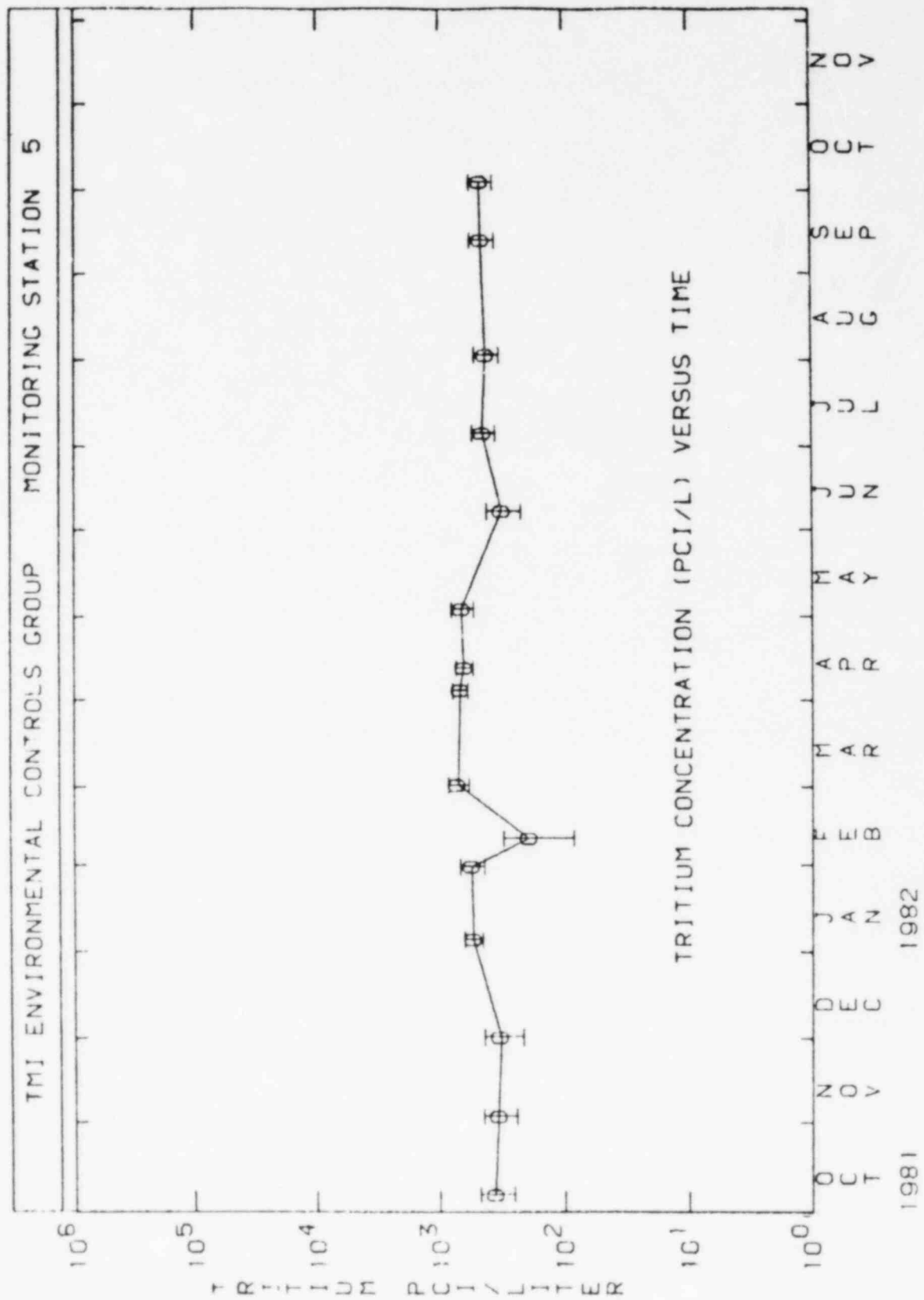
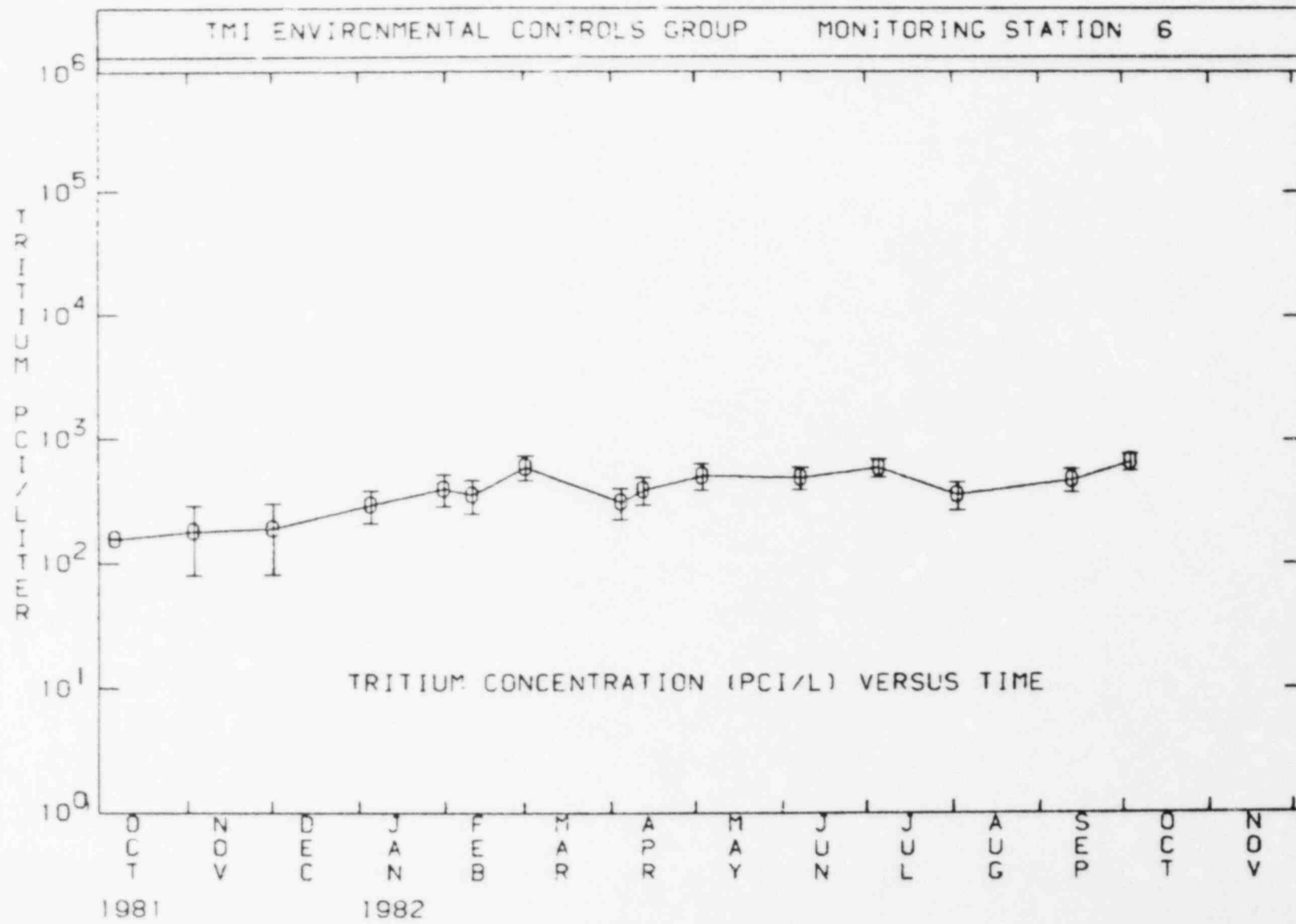
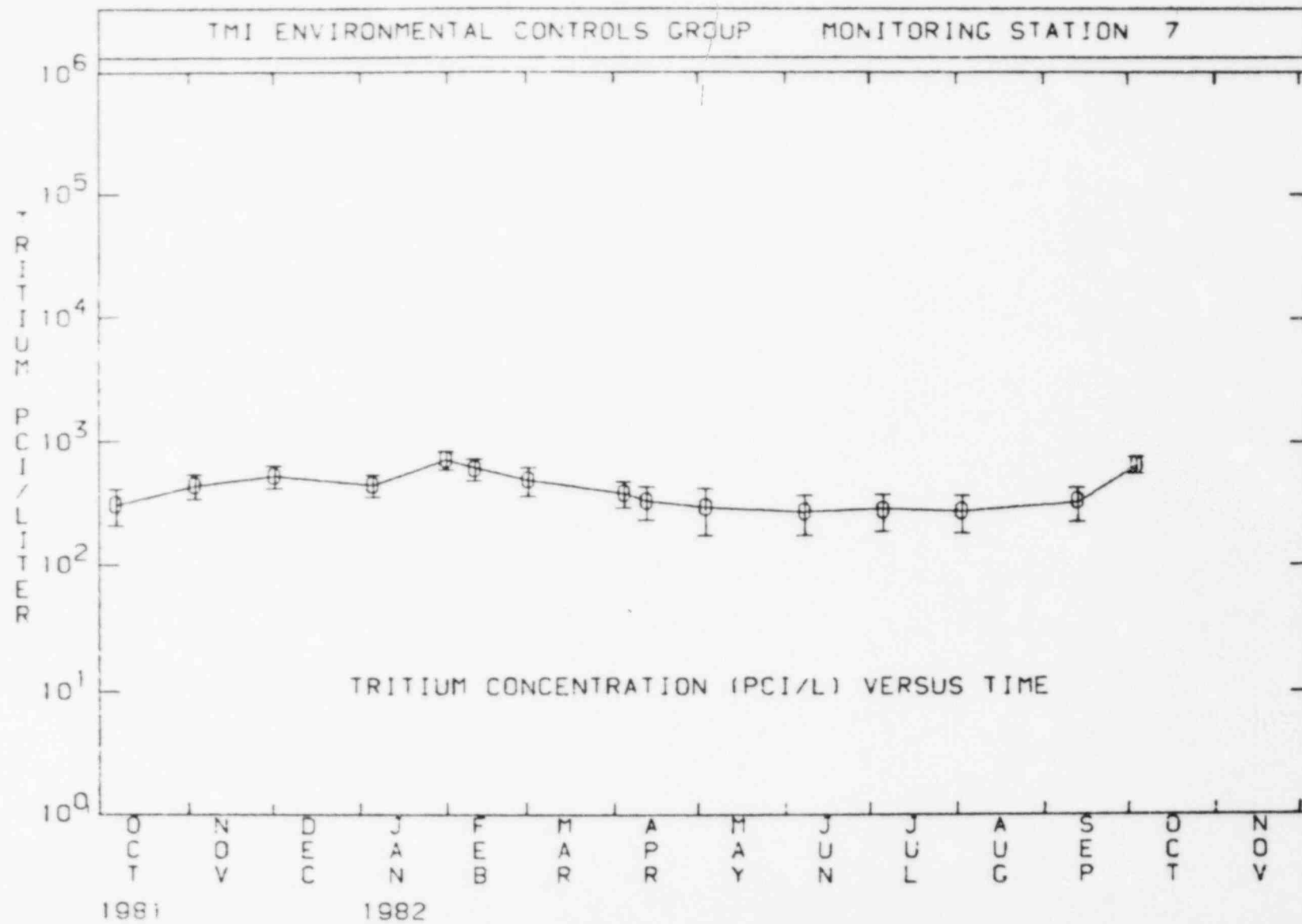
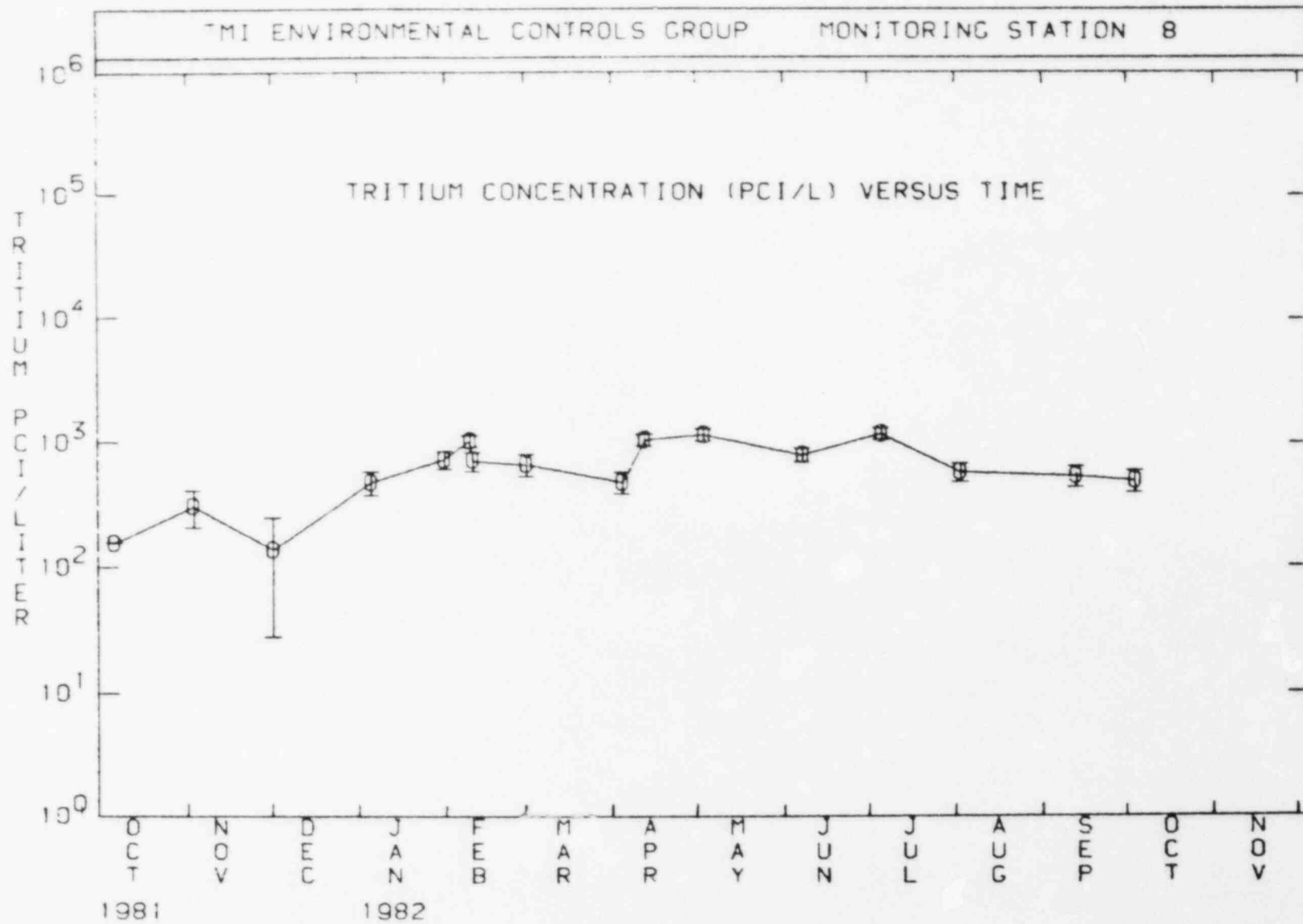


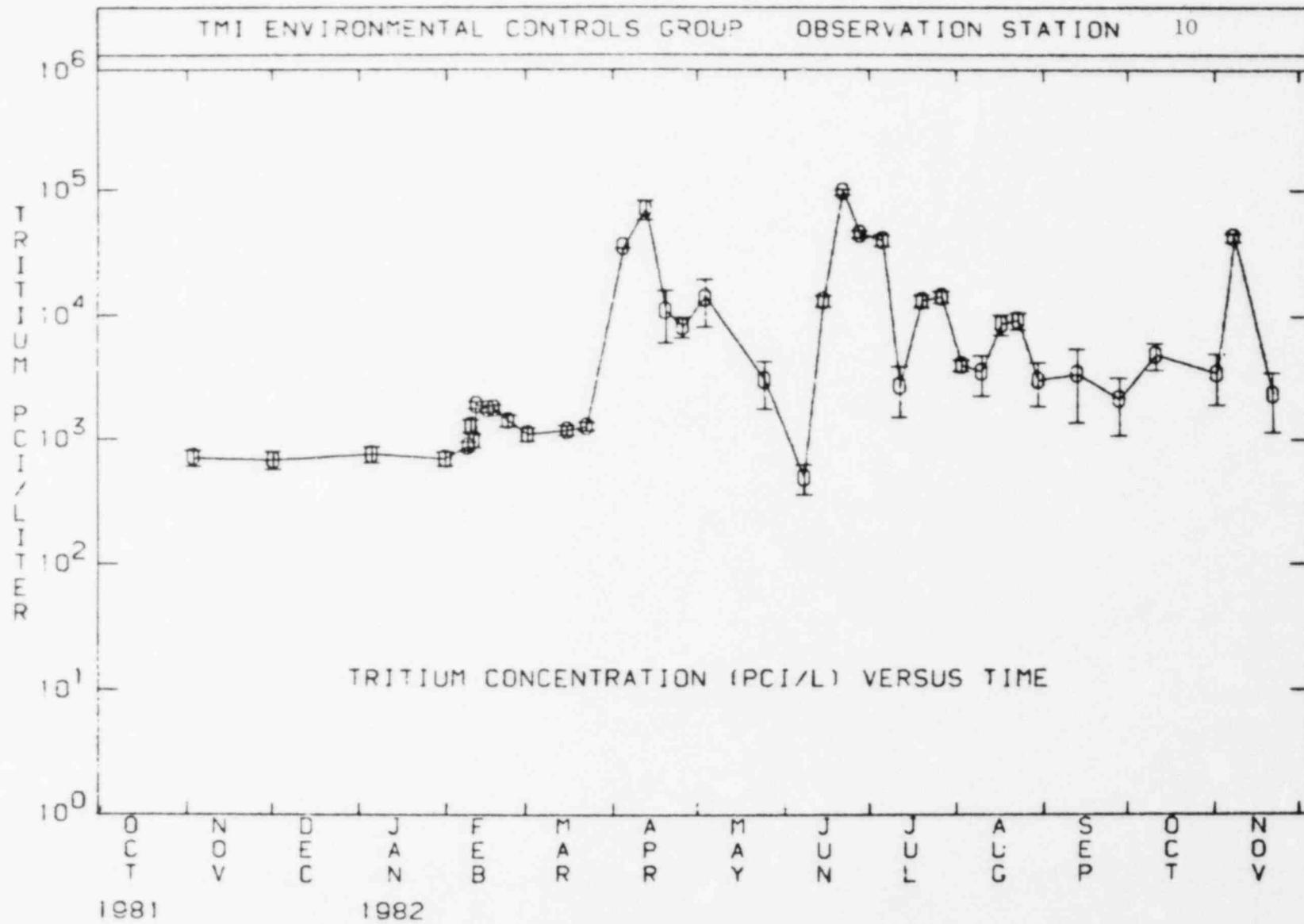
Figure 1
Page 5 of 15

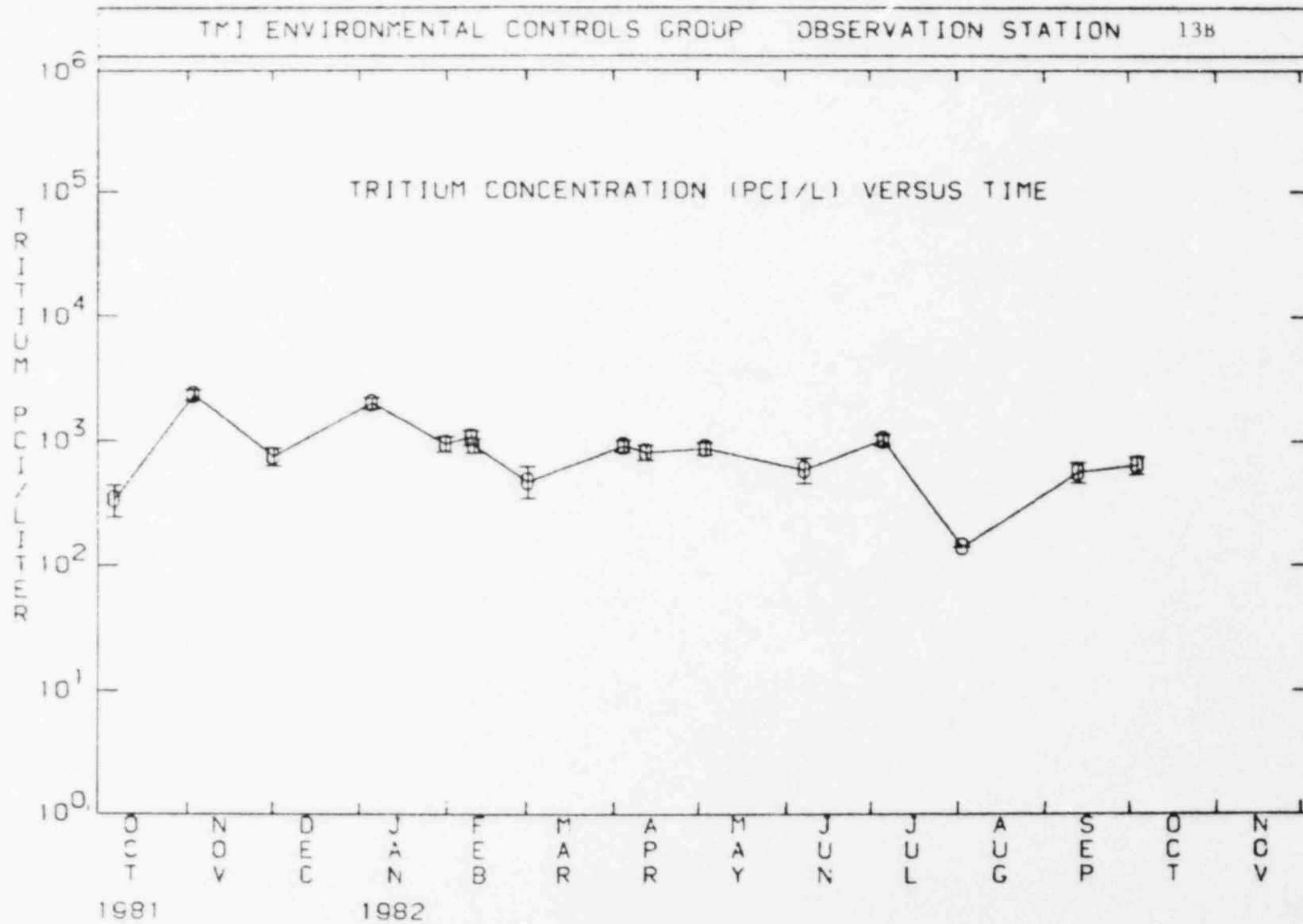


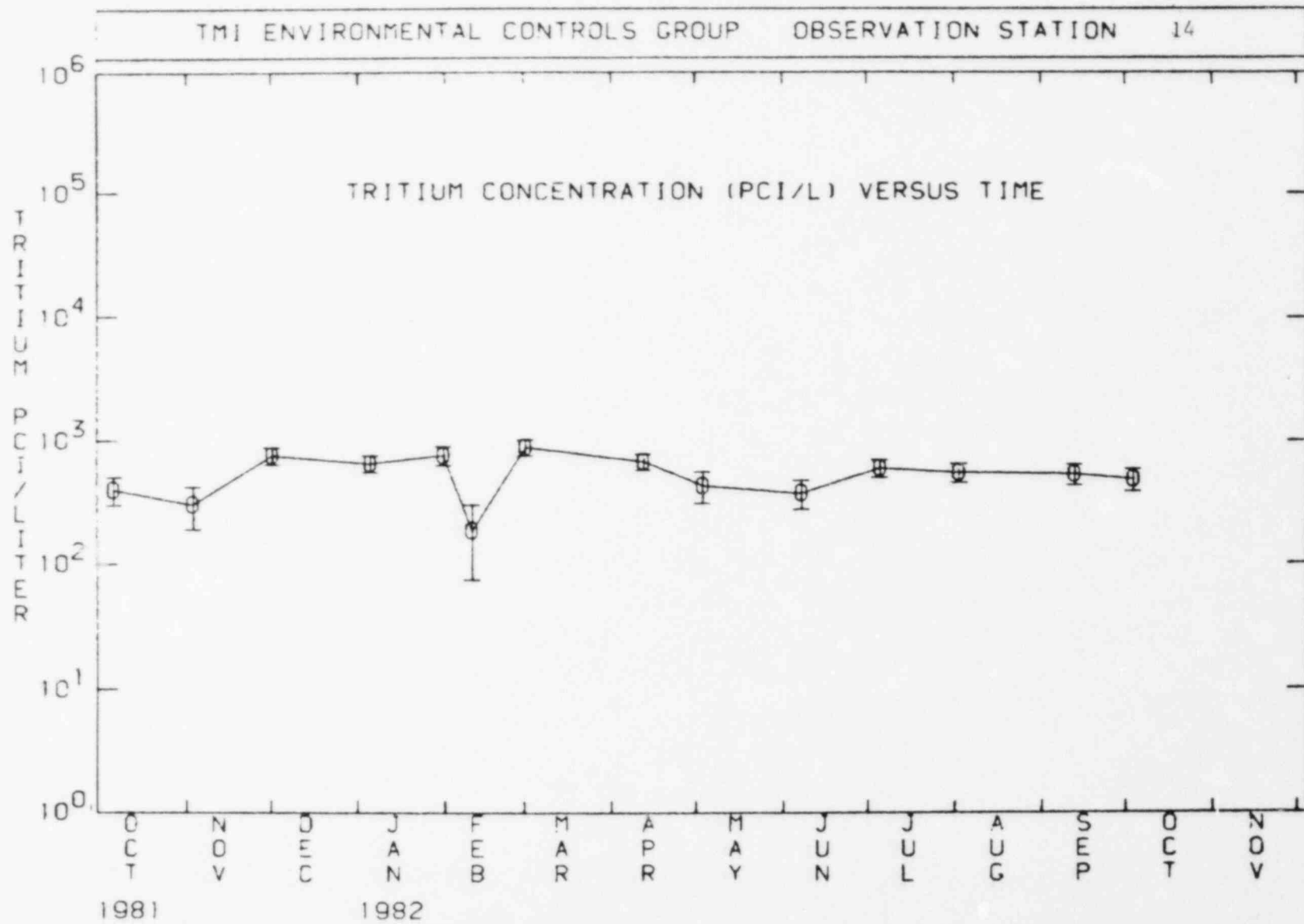


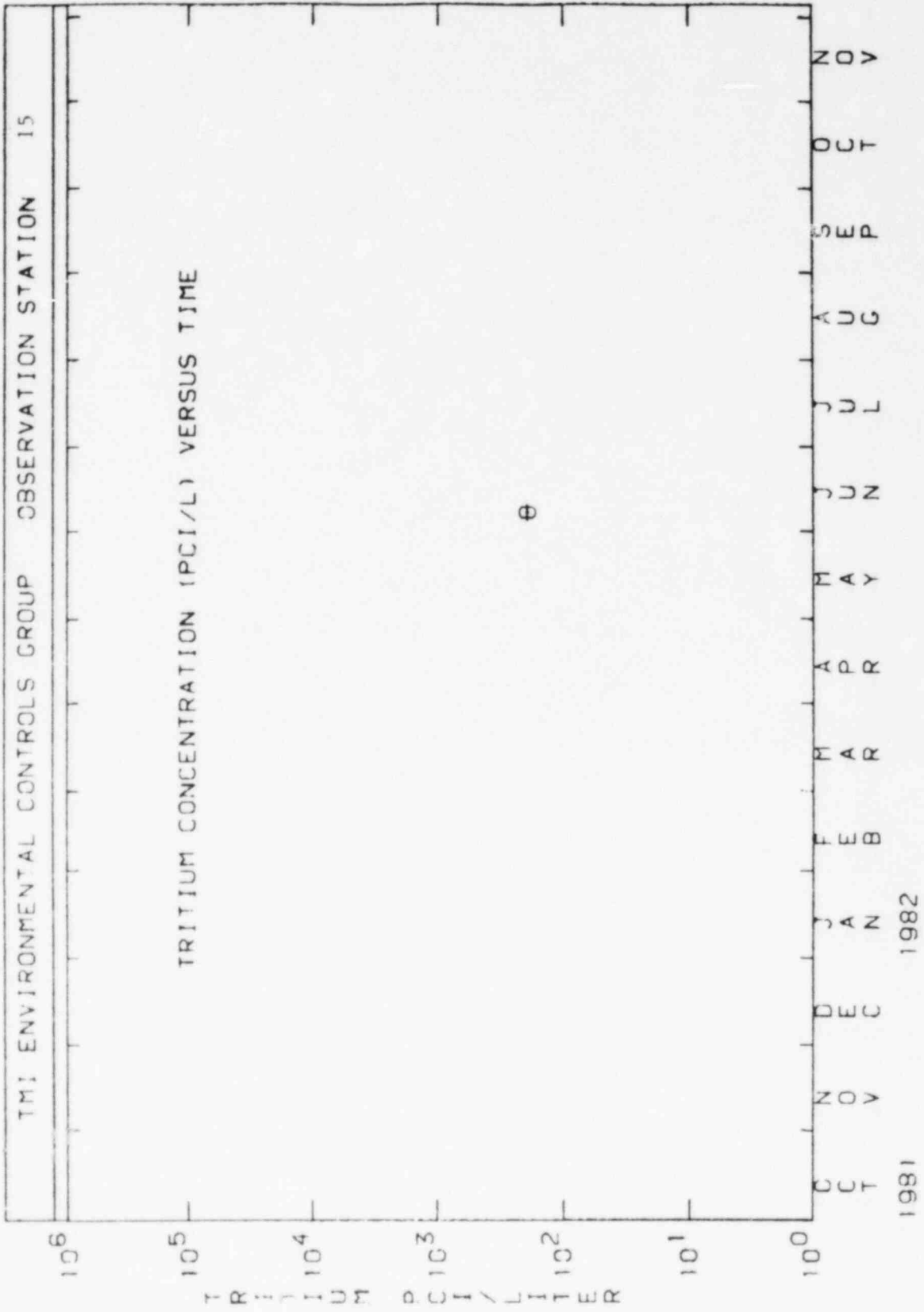


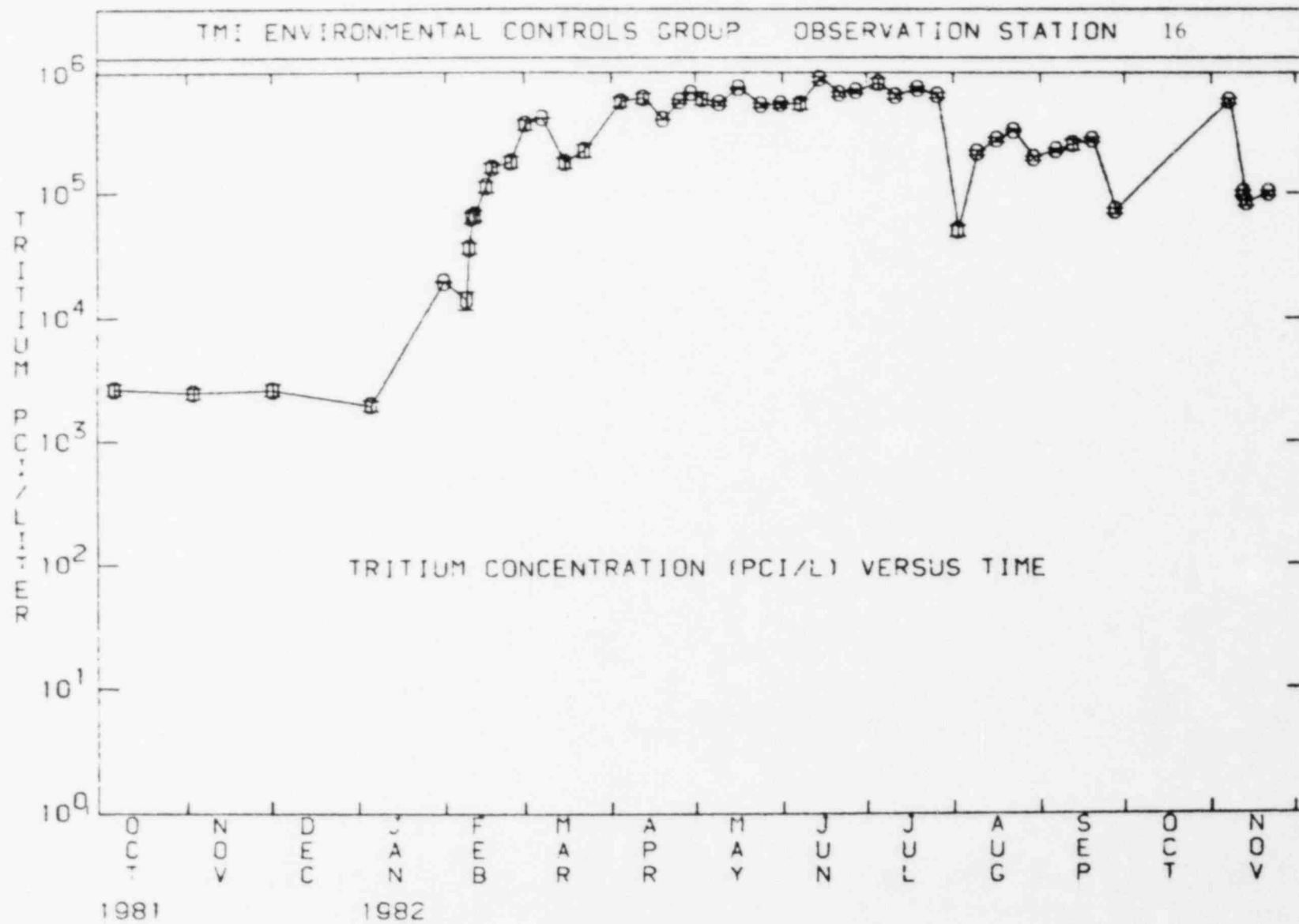


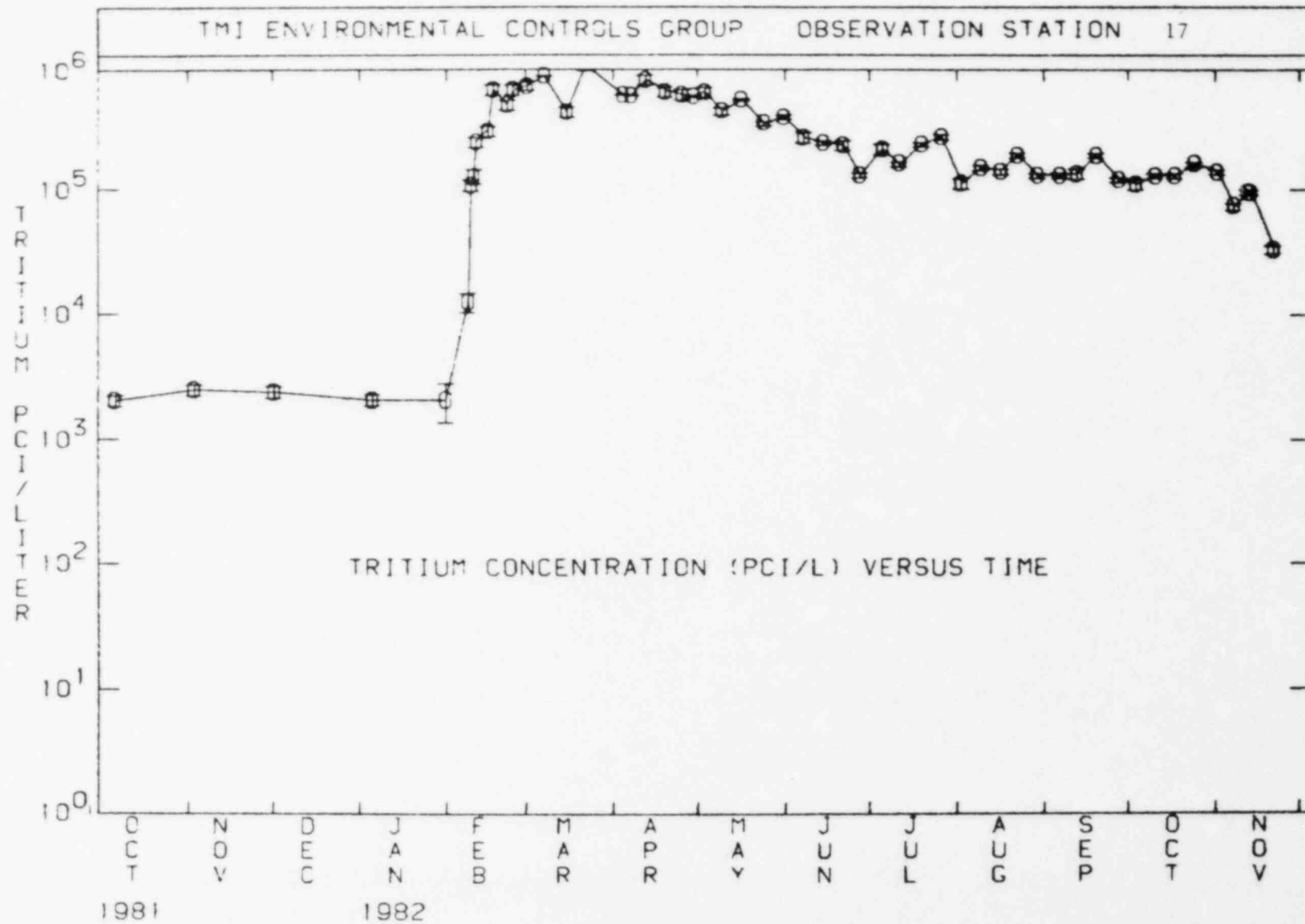


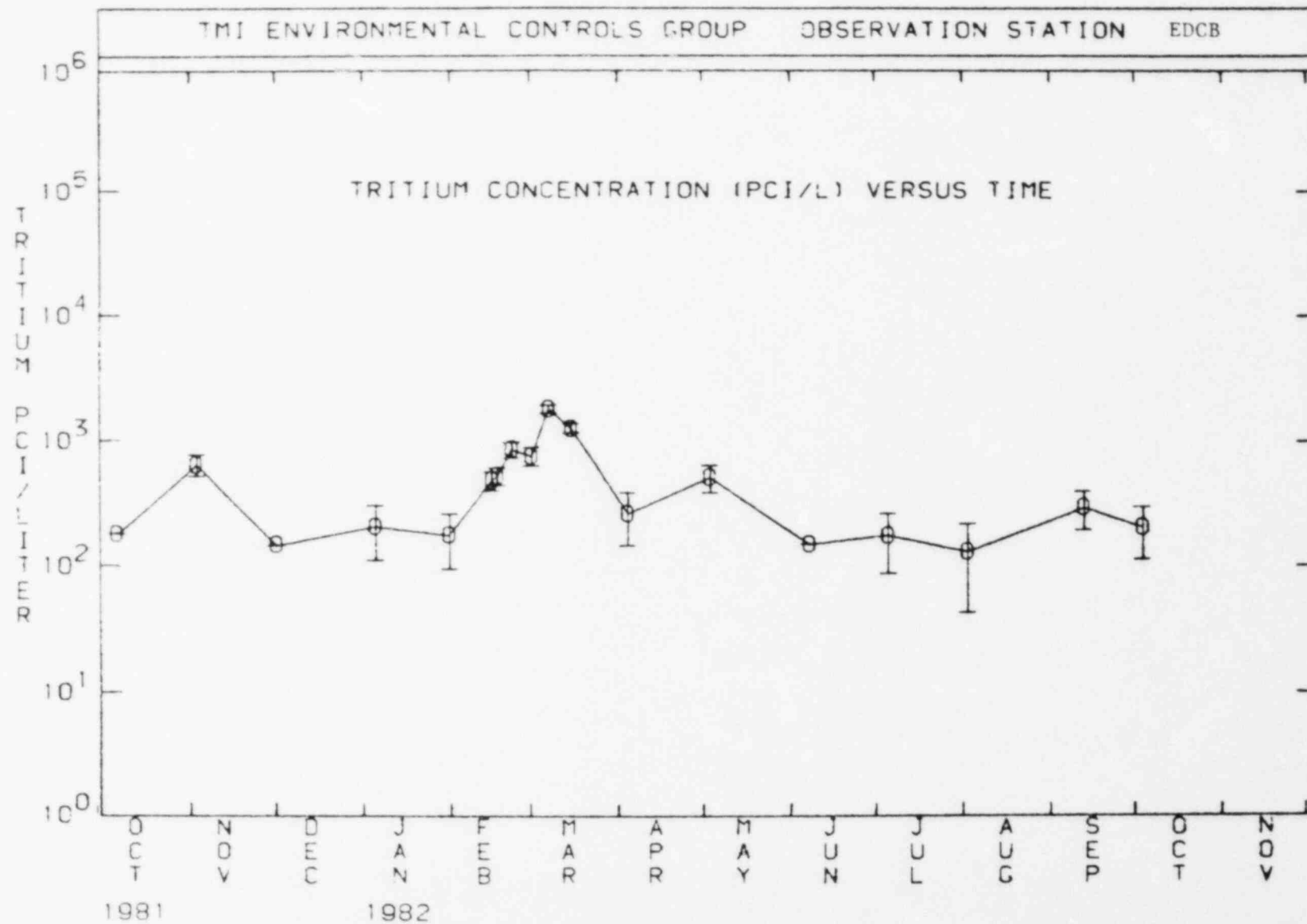


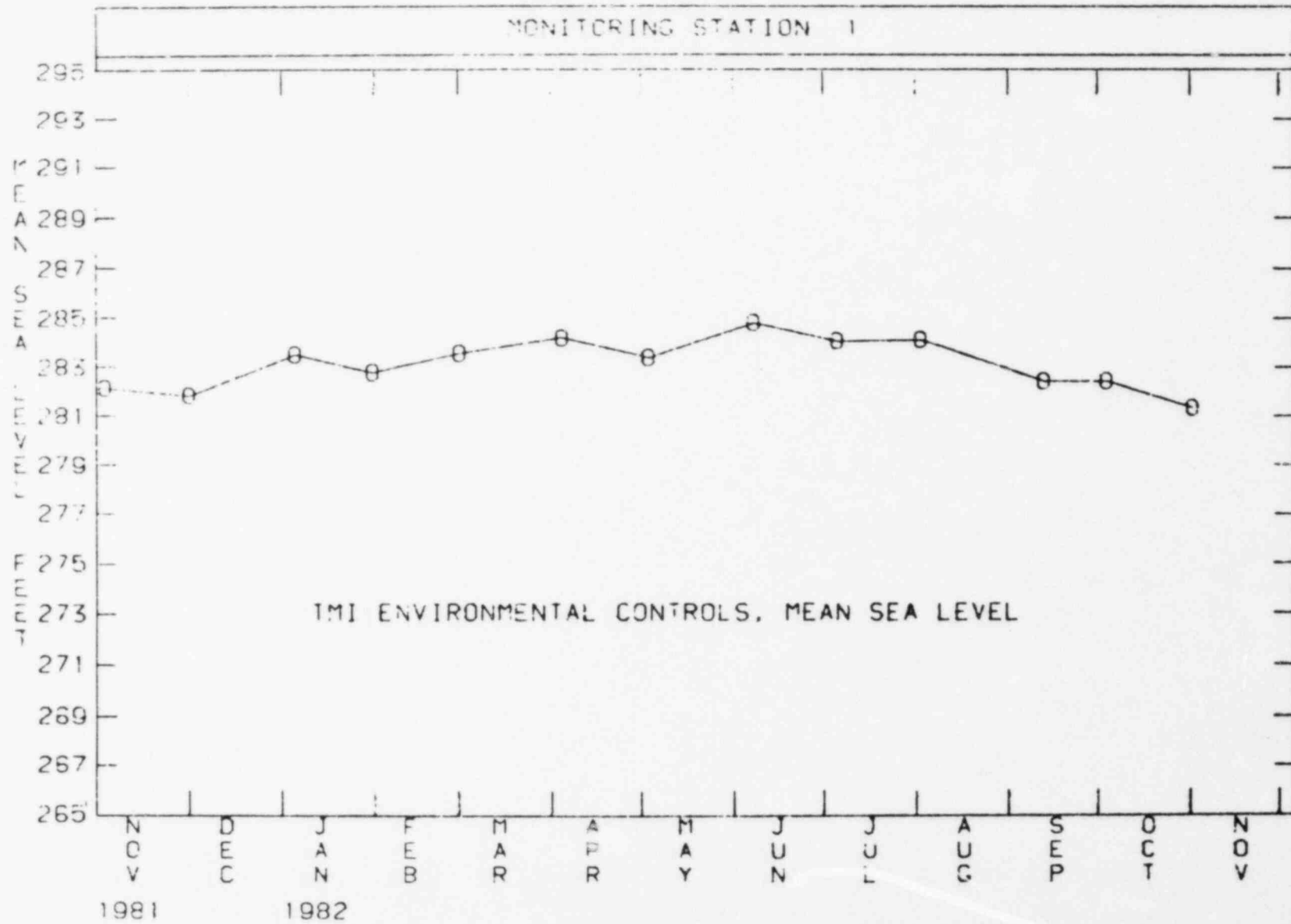


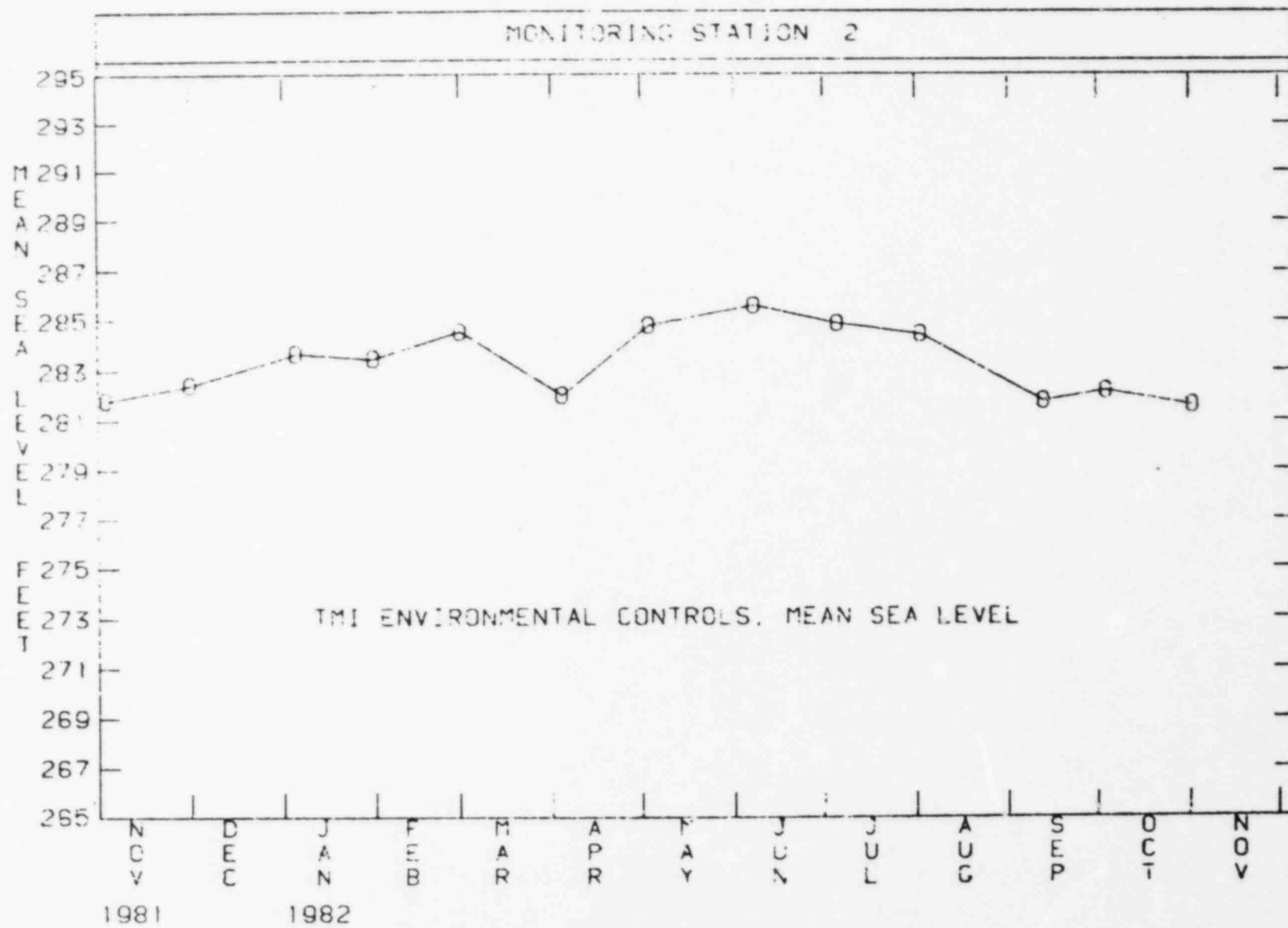


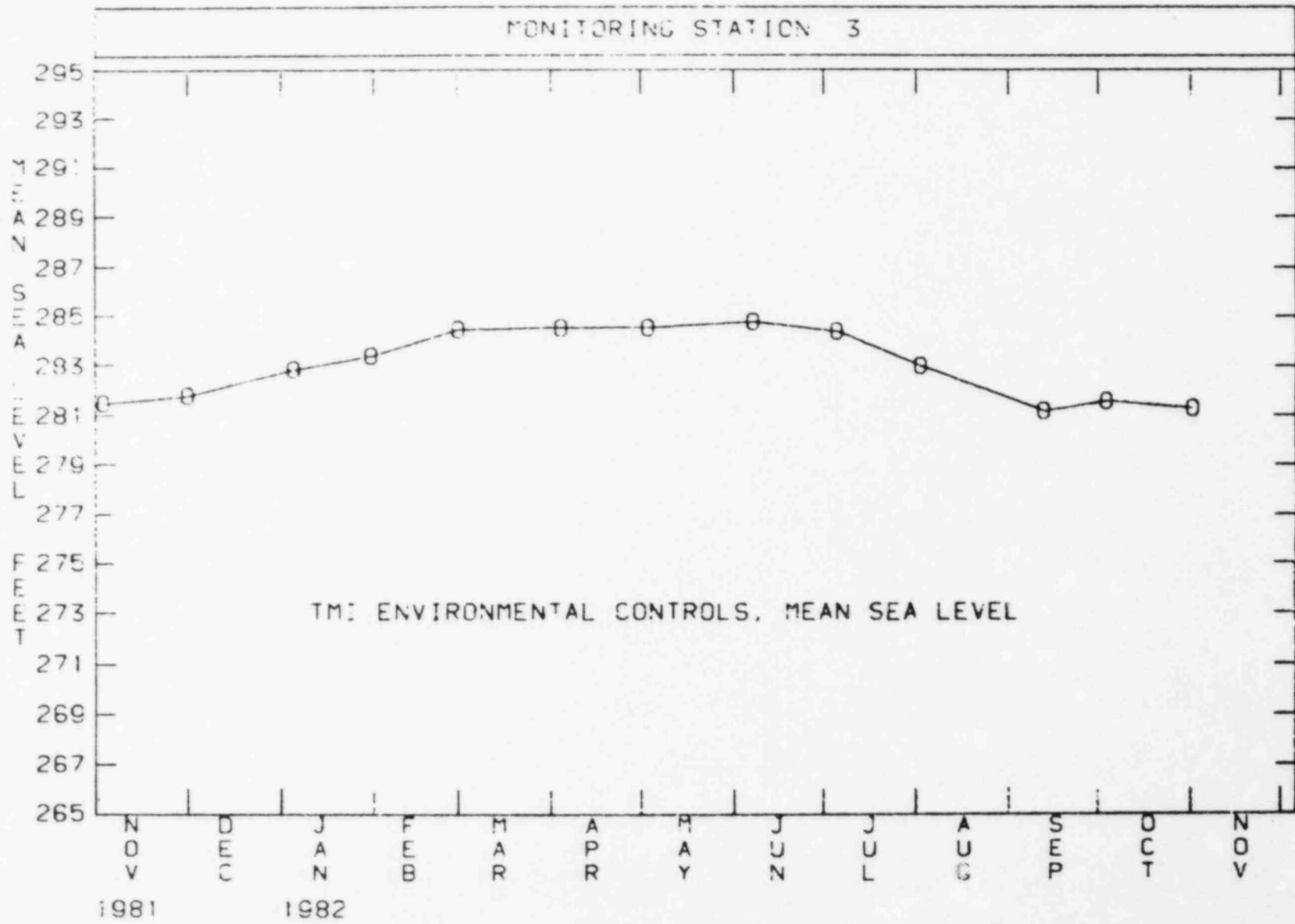


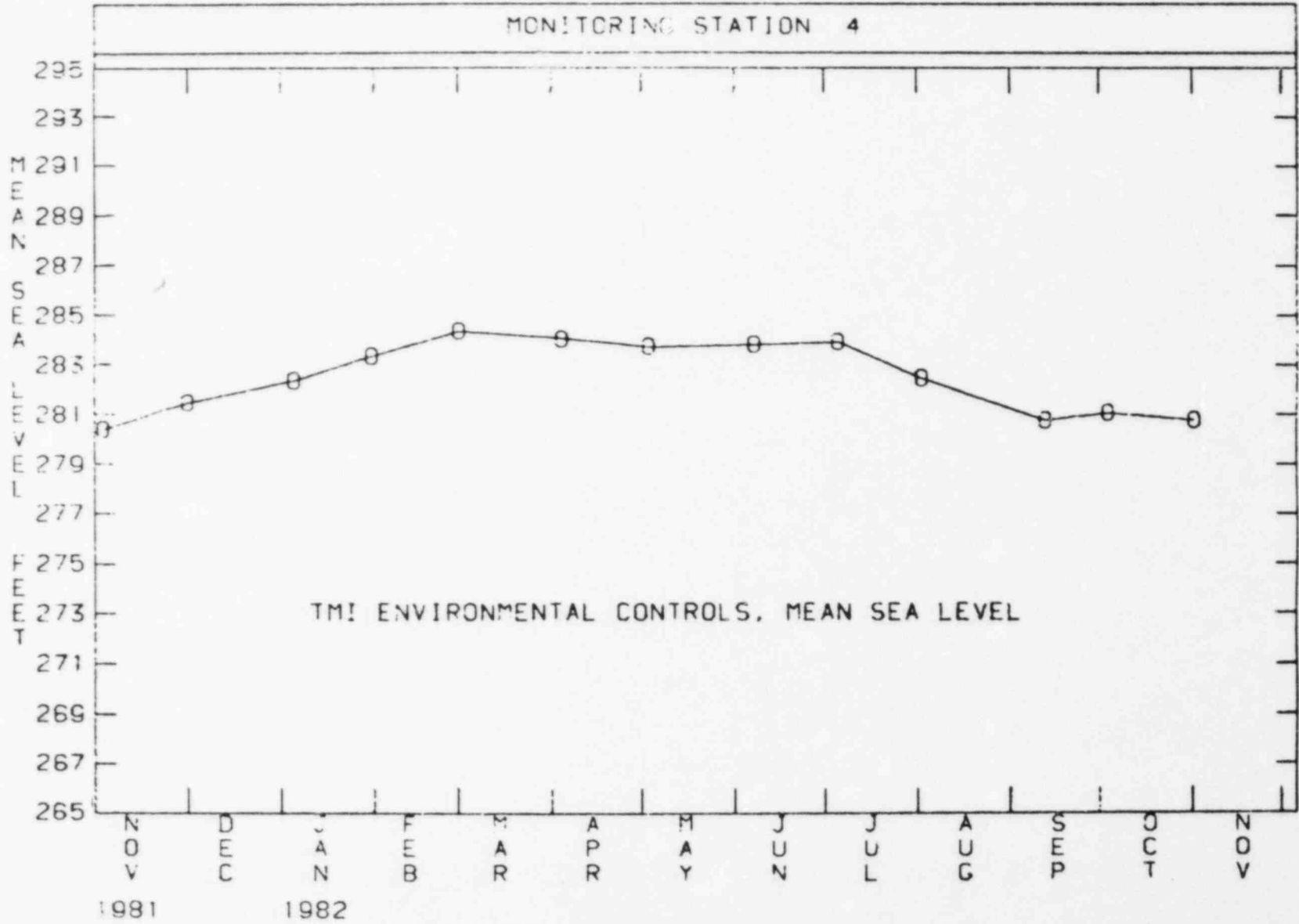


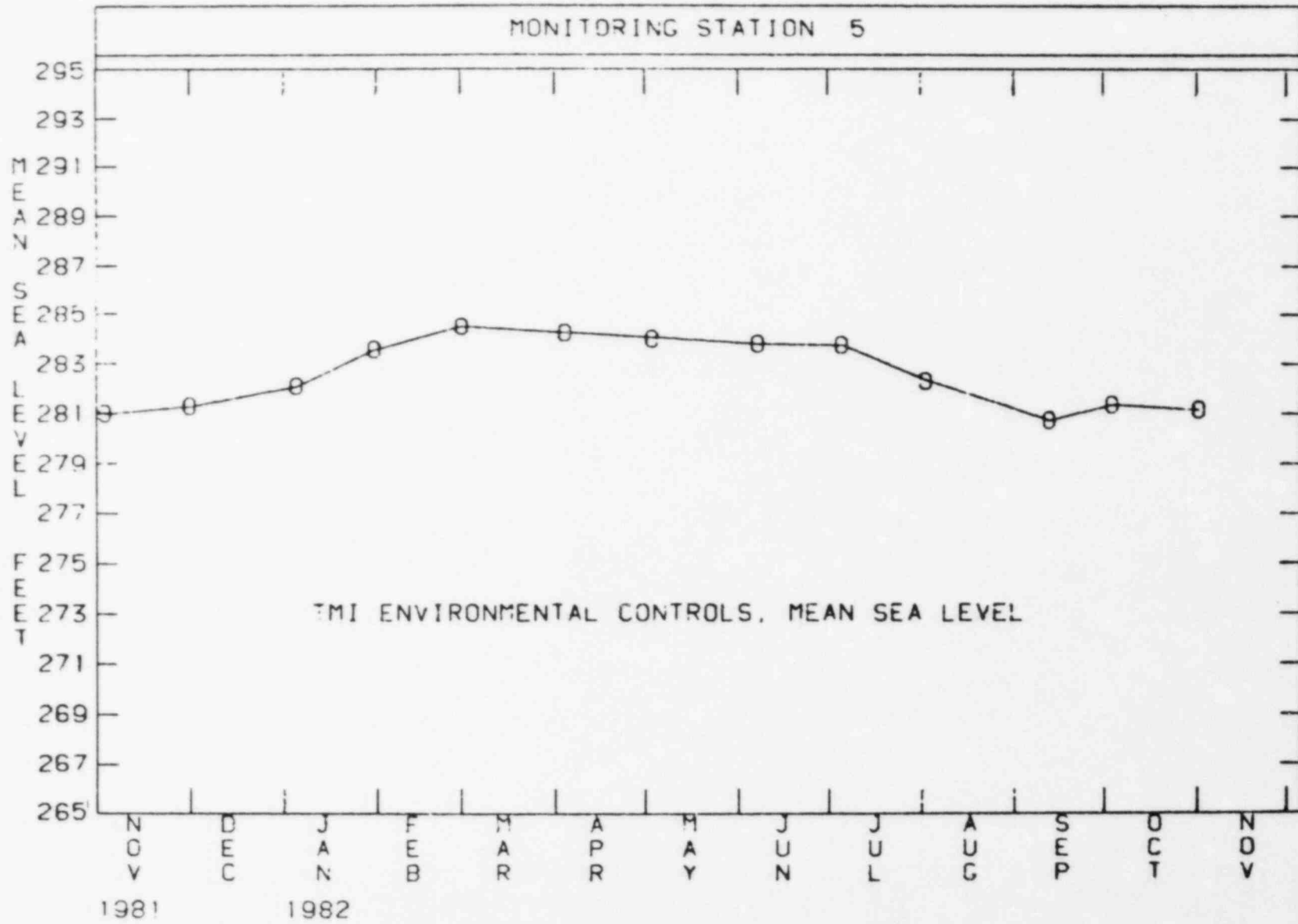


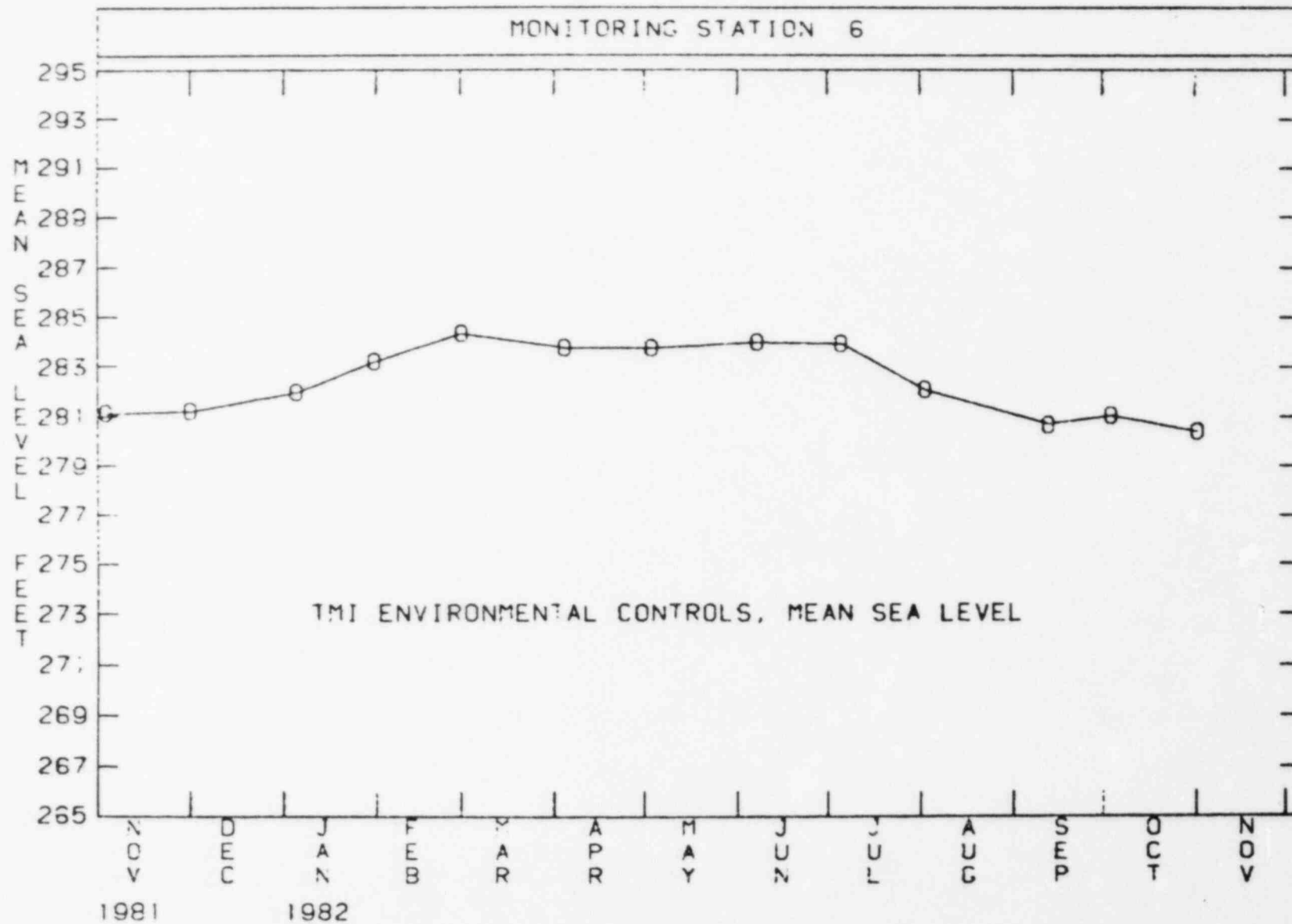


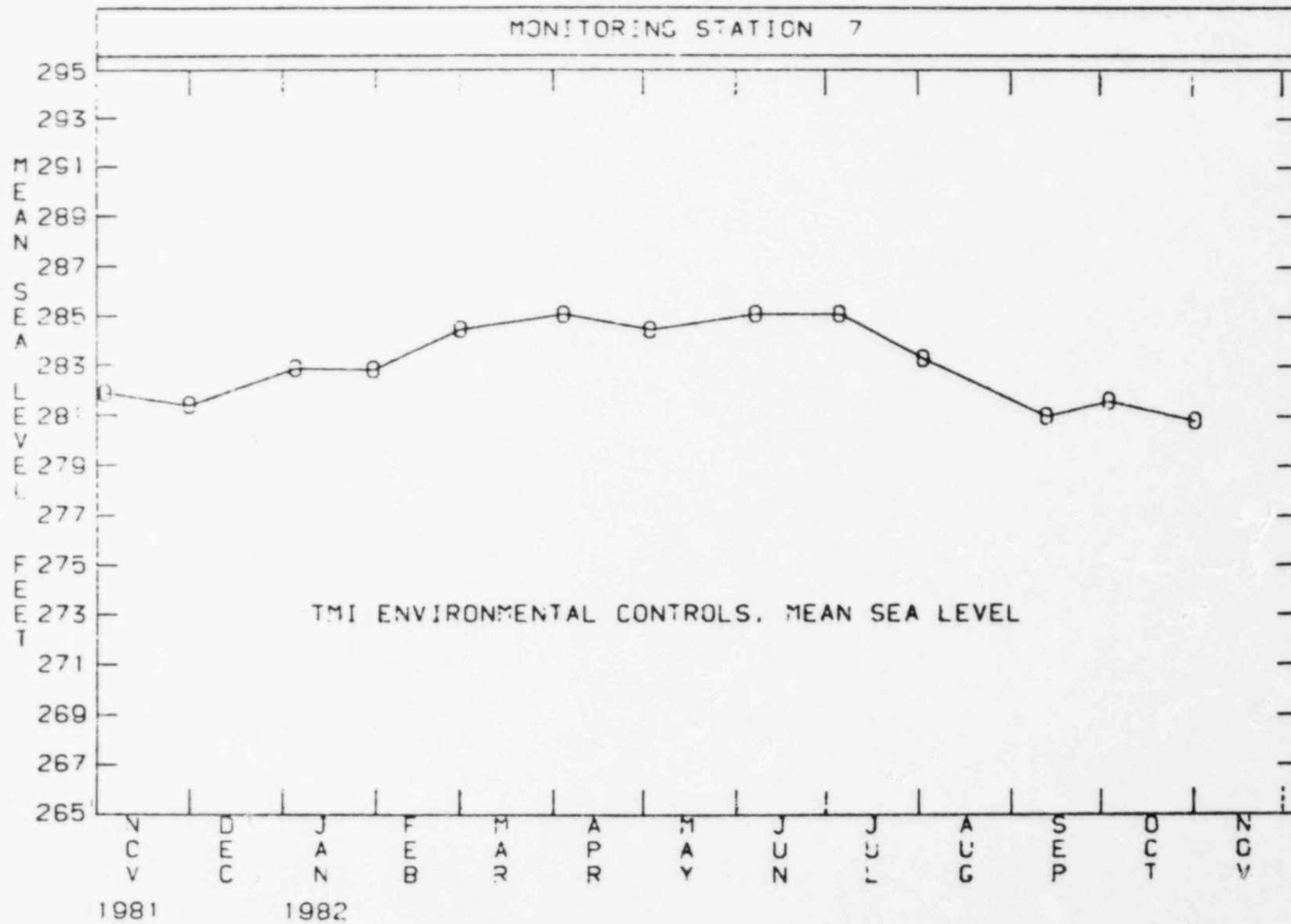


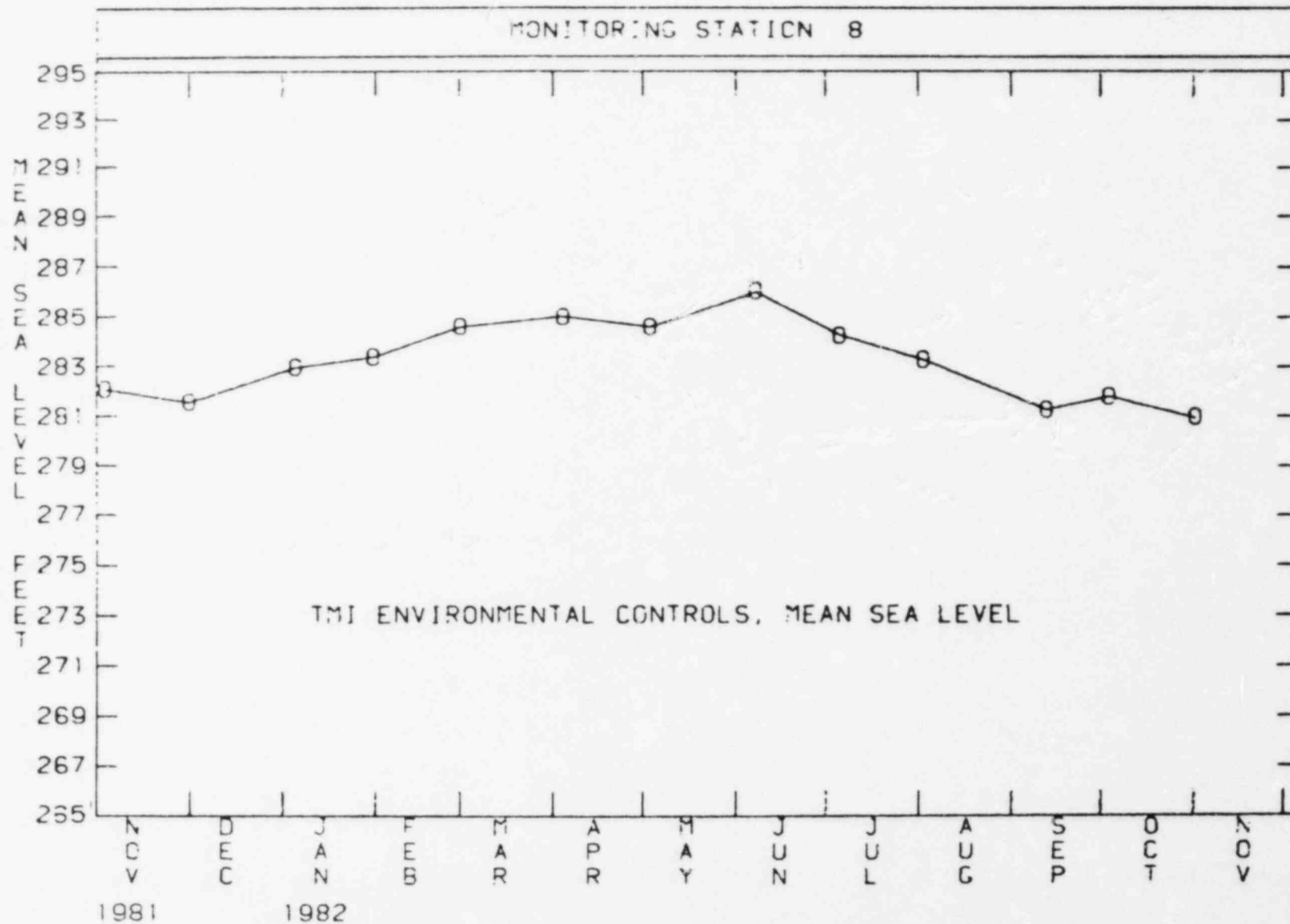


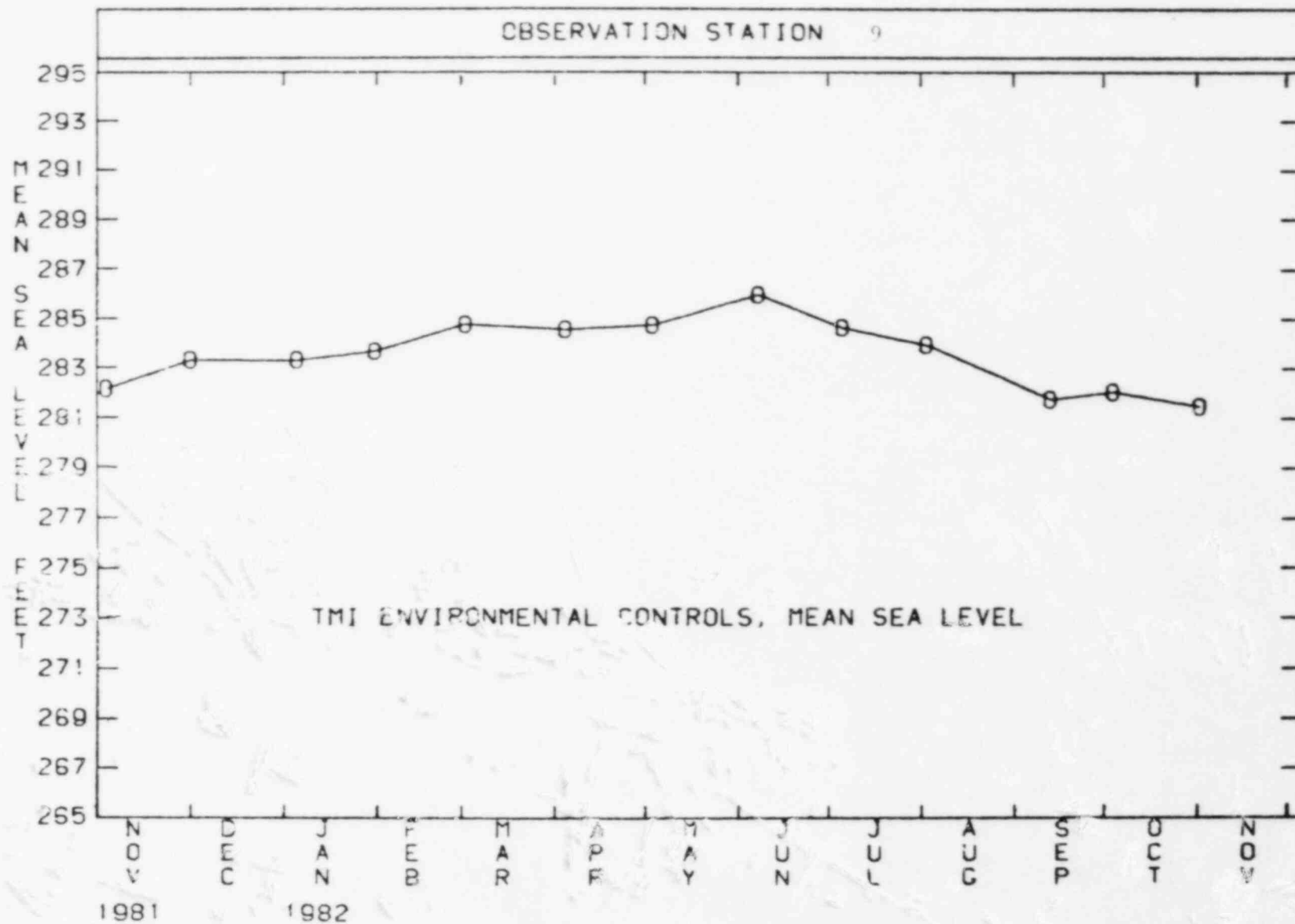


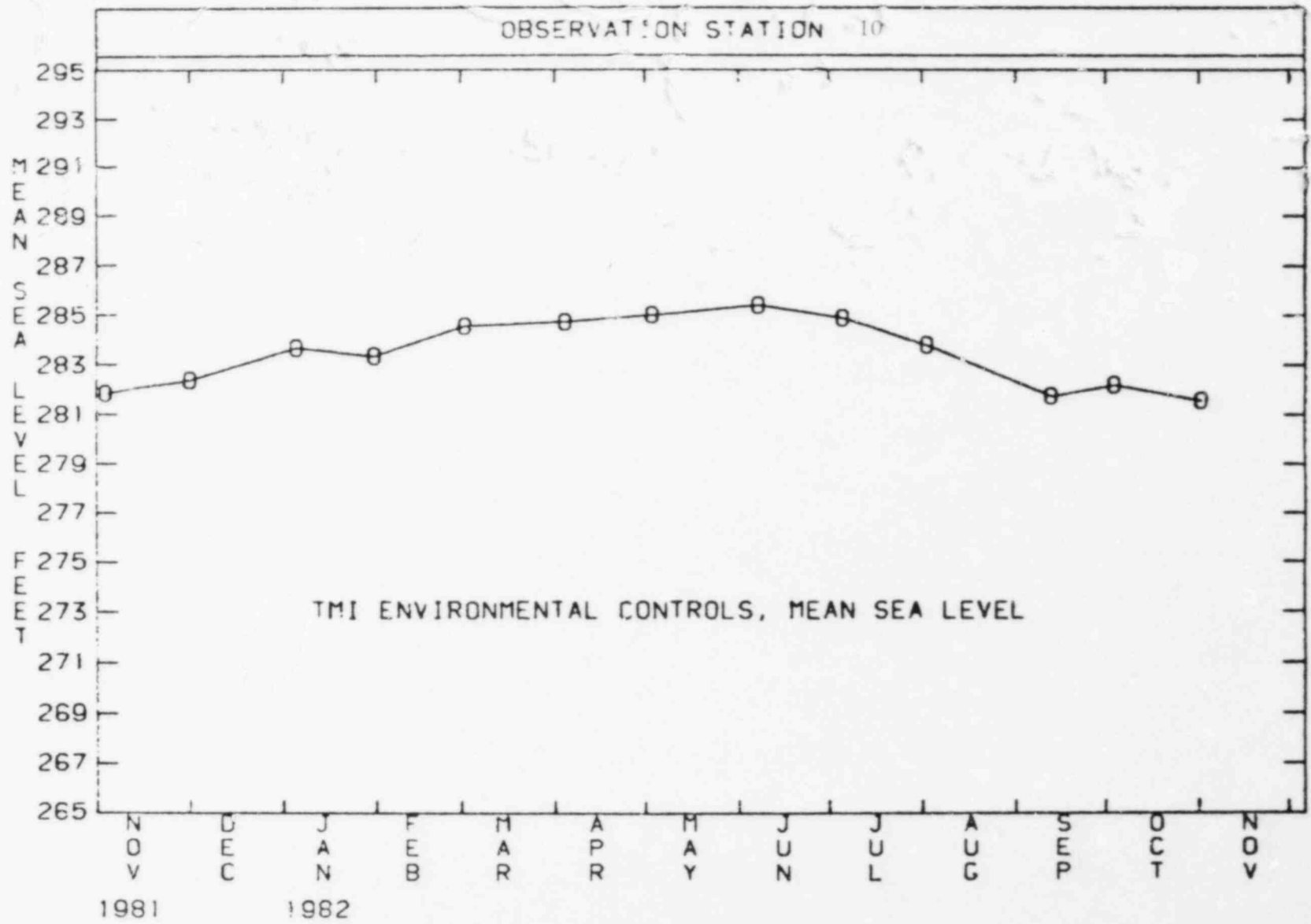


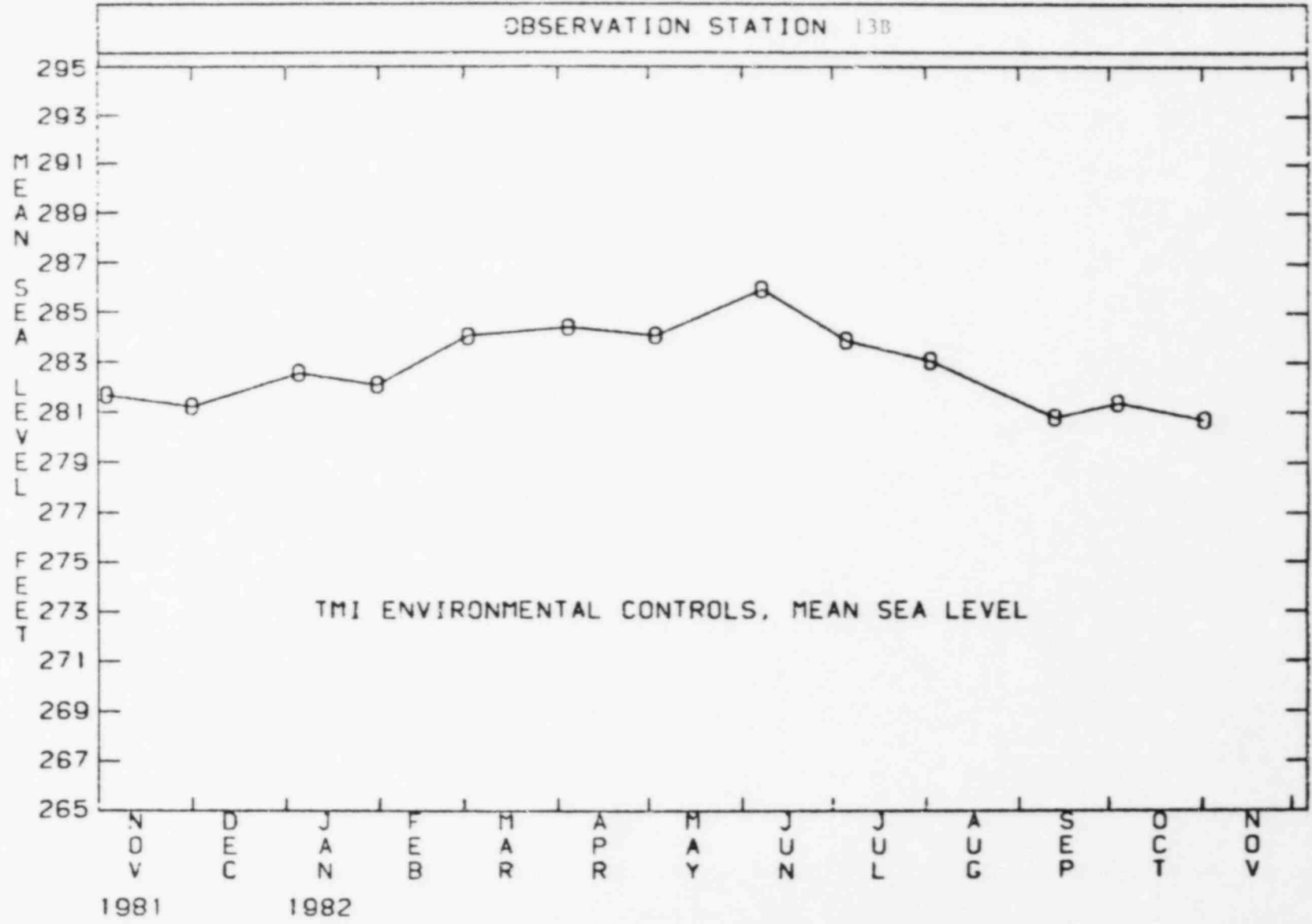


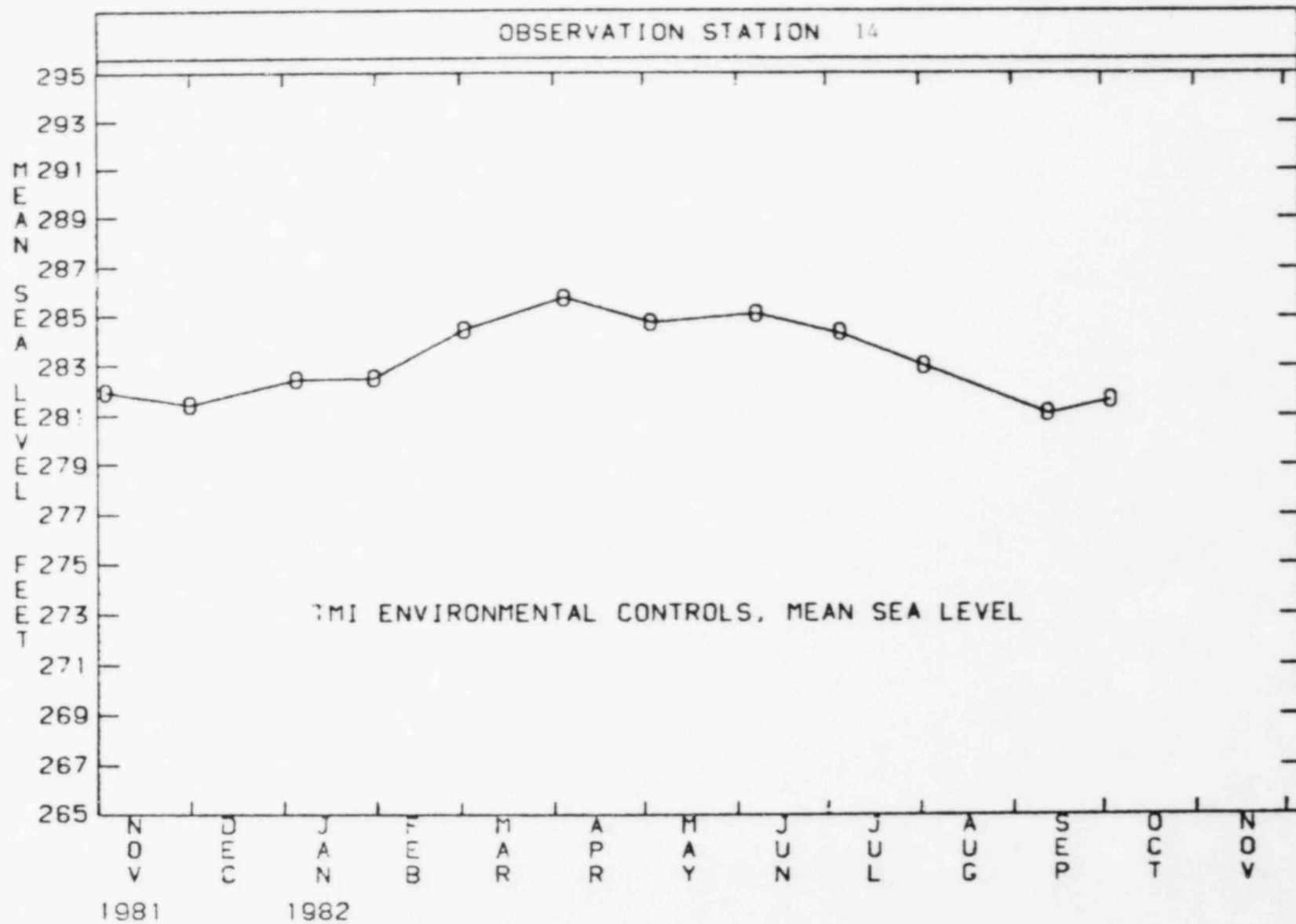


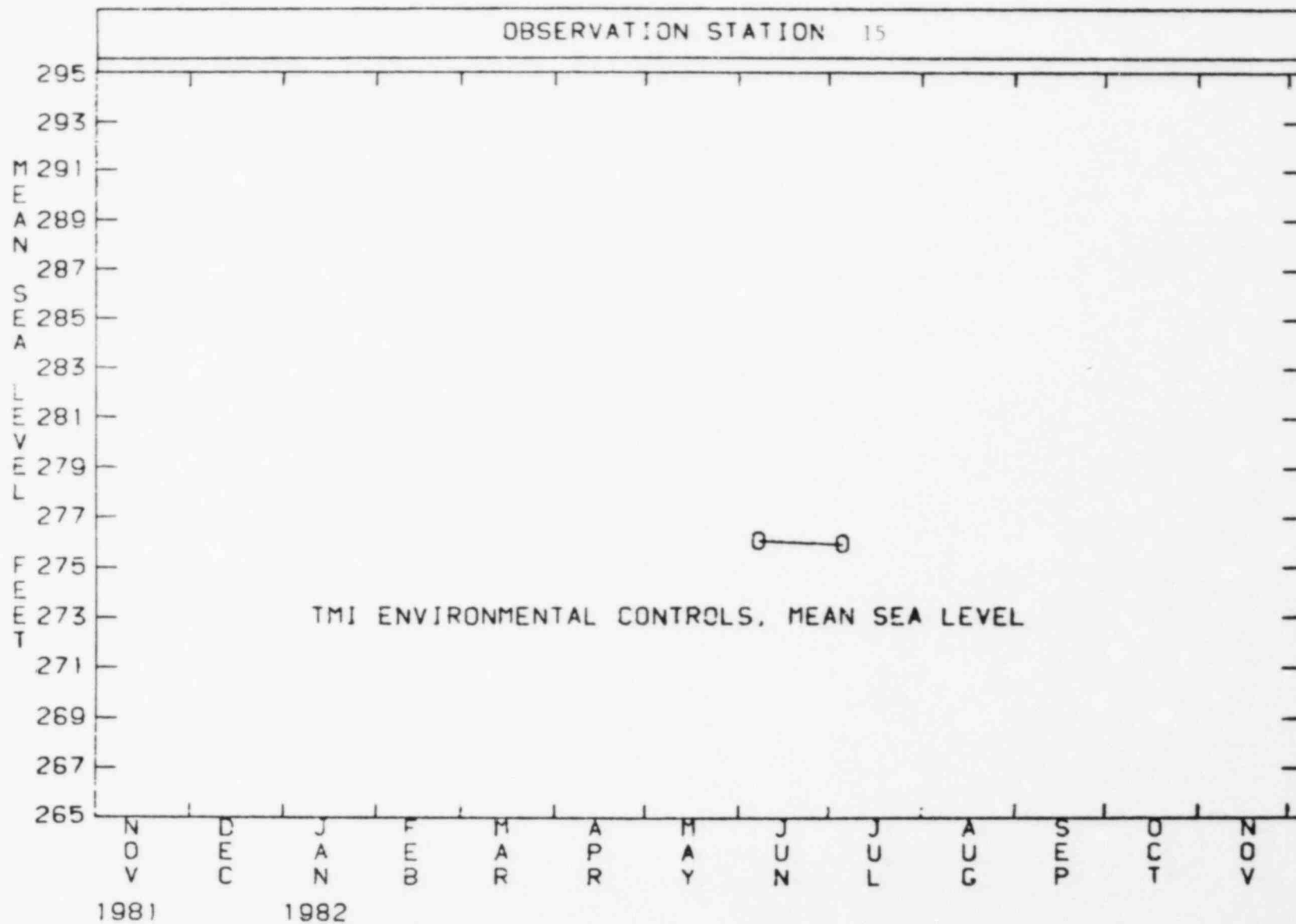


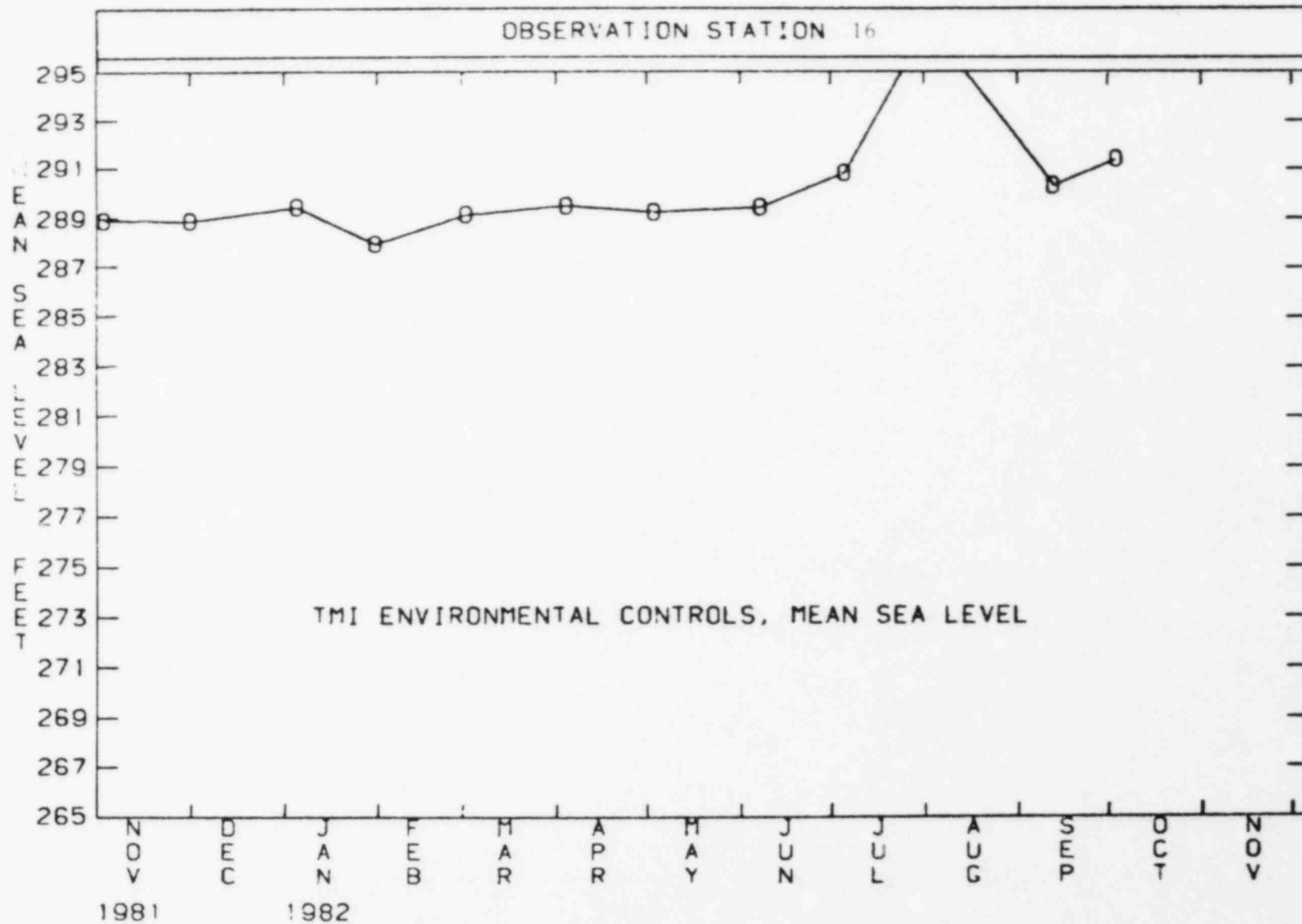


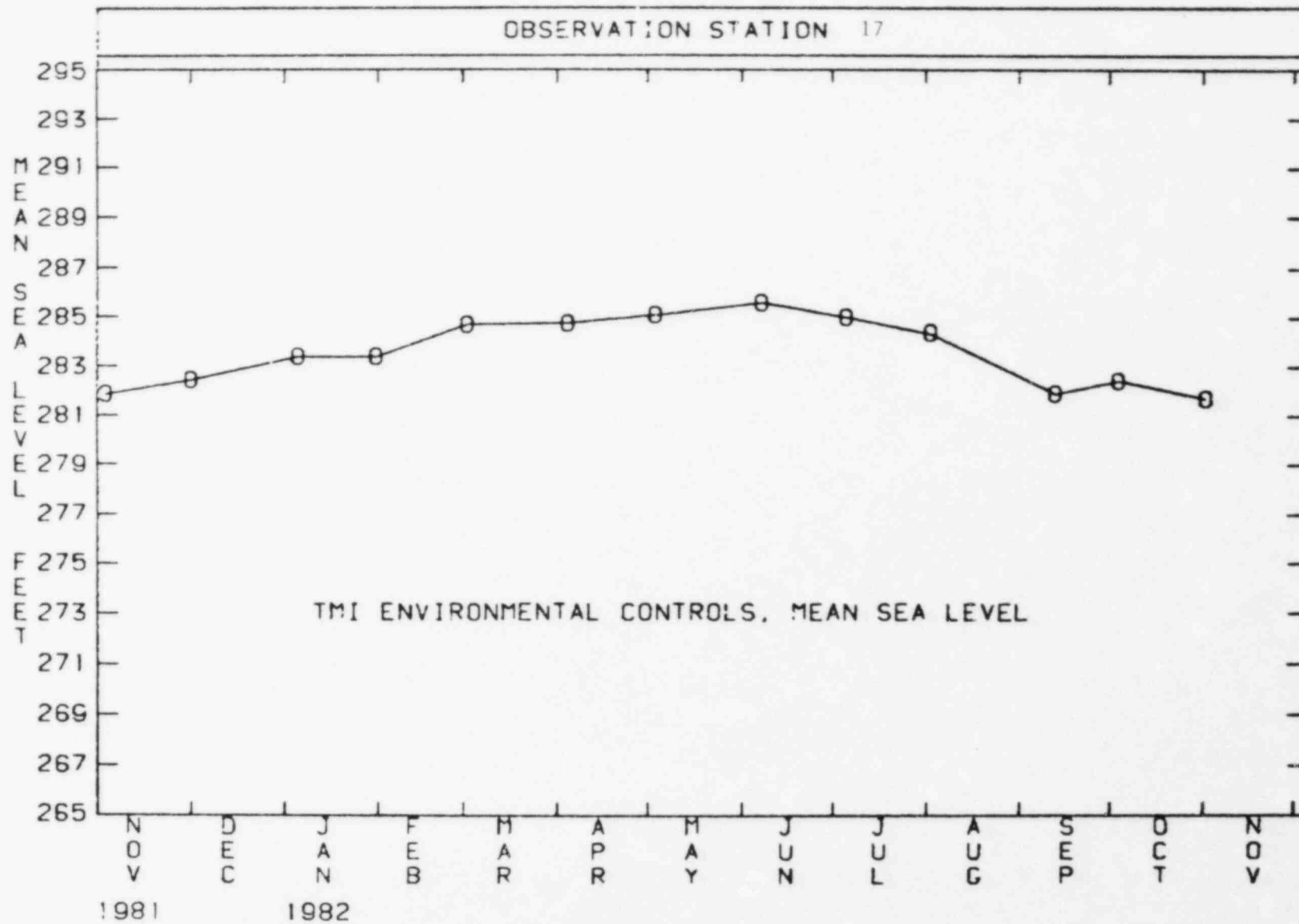




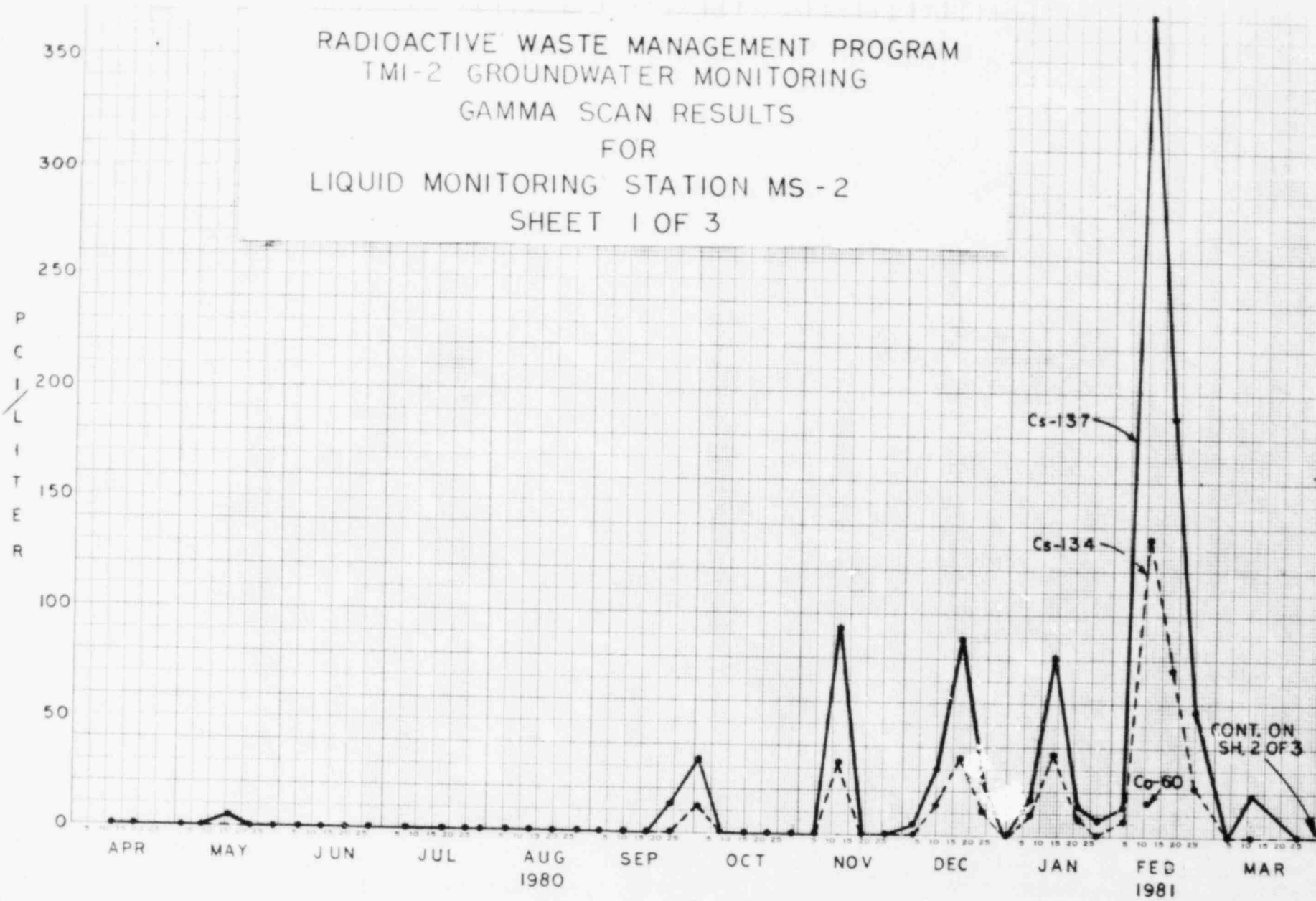




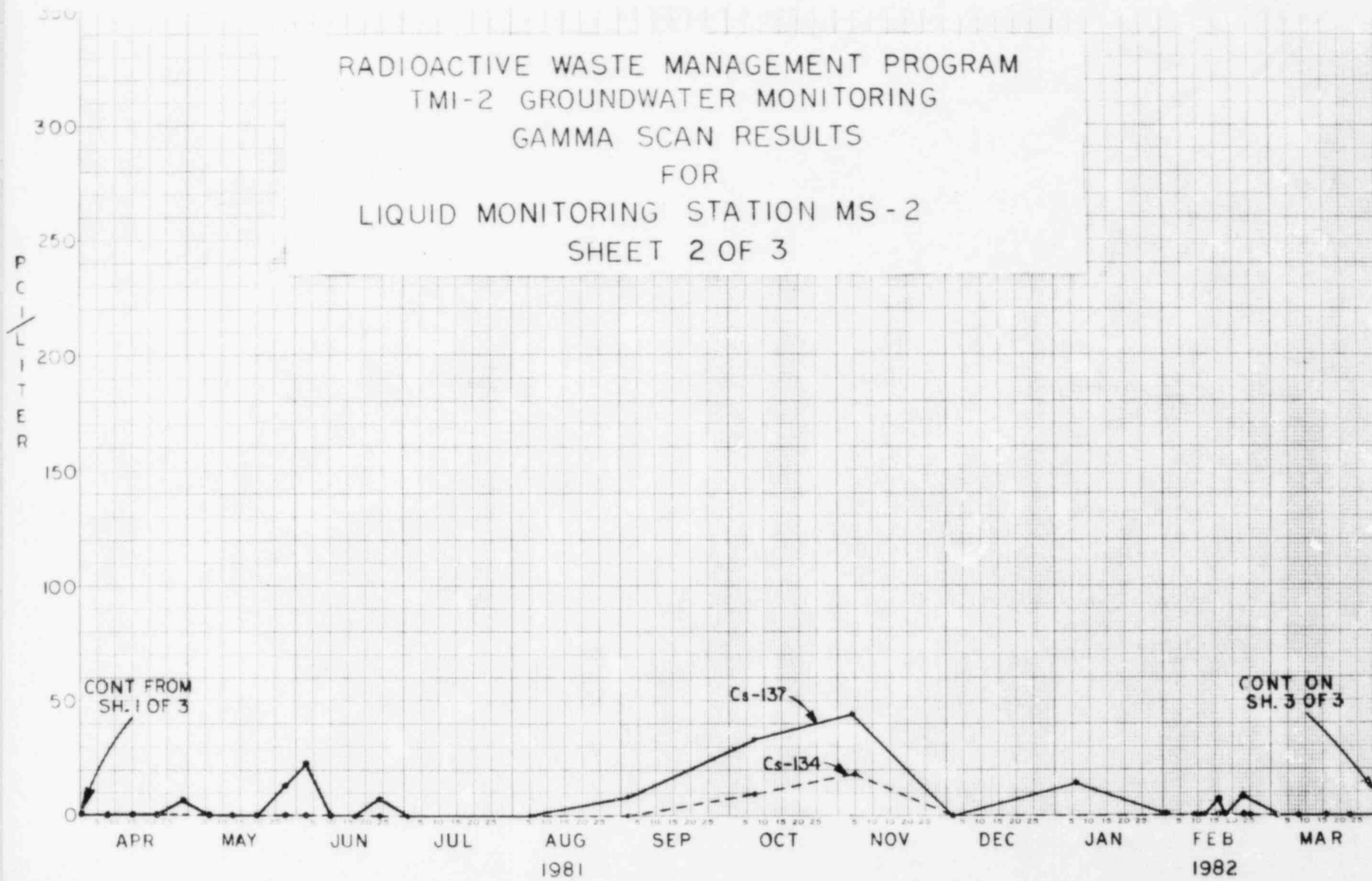




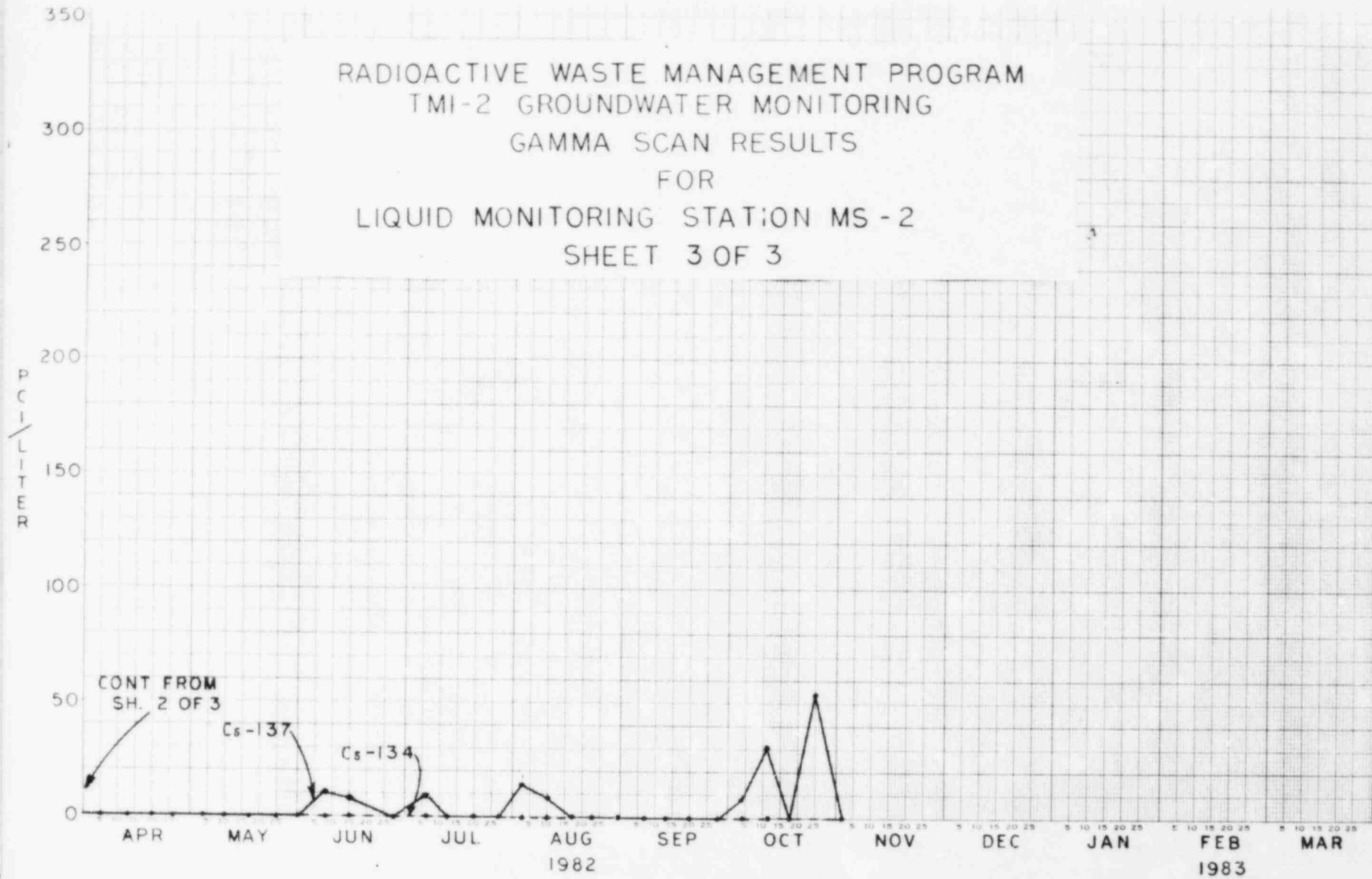
RADIOACTIVE WASTE MANAGEMENT PROGRAM
TMI-2 GROUNDWATER MONITORING
GAMMA SCAN RESULTS
FOR
LIQUID MONITORING STATION MS - 2
SHEET 1 OF 3



RADIOACTIVE WASTE MANAGEMENT PROGRAM
TMI-2 GROUNDWATER MONITORING
GAMMA SCAN RESULTS
FOR
LIQUID MONITORING STATION MS-2
SHEET 2 OF 3



RADIOACTIVE WASTE MANAGEMENT PROGRAM
TMI-2 GROUNDWATER MONITORING
GAMMA SCAN RESULTS
FOR
LIQUID MONITORING STATION MS-2
SHEET 3 OF 3



Sr-89 and Sr-90 Groundwater Results (pCi/l)
1982 1st Quarter Composite

<u>Station #</u>	<u>Sr-89</u>	<u>Sr-90</u>
1	<1.20	<.646
2	<2.34	<.569
3	<1.80	<.641
4	<1.40	<.502
5	<1.31	<.457
6	<1.57	<.629
7	<1.70	<.696
8	<1.58	<.826
9	NO SAMP	NO SAMP
10	<1.34	<.524
13B	<2.05	<.967
14	<1.42	<.397
15	NO SAMP	NO SAMP
16	<6.9	<1.30
17	<2.50	<.667
EDCB	<1.86	<.525

Sr-89 AND Sr-90 GROUNDWATER RESULTS (p Ci/l)
1982 2ND QUARTER COMPOSITE

<u>WELL #</u>	<u>Sr-89</u>	<u>Sr-90</u>
1	<1.209	<.713
2	<1.674	<.496
3	<.911	<.512
4	1.13±.75	.617±.45
5	.814±.65	.532±.34
6	<1.160	<.601
7	<.794	<.417
8	<1.969	1.42±.89
9	No Sample	No Sample
10	<1.736	<.984
13B	<.818	.564±.330
14	<.818	<.481
15*	<.797	<.490
16	<3.18	<1.97
17	<1.190	<.688
EDCB	<1.214	<.749

*June 8 sample only (no other samples were available).